

CORFIT[™]
Underground Double Wall Corrugated Pipes

A REVOLUTION TODAY FOR
A CLEANER INDIA TOMORROW

PRINCE[™]
PIPING SYSTEMS





A Revolution in India's Piping System

Prince Pipes and Fittings Ltd. is a leading manufacturer of PVC Piping Systems in India. Working towards its vision of making India's piping system a Zero-Defect System, Prince Pipes provides ideal solutions for Agriculture, Drainage, Plumbing, Sewerage and other applications with its extensive range of 7500+ products. With an array of products using wide range of polymers like CPVC, PVC, PPR & HDPE, Prince Pipes ensures that all the quality parameters are met before the product reaches our customers.

Prince Pipes has established an extensive distributor network spanning the entire length & breadth of India. With state-of-the-art facilities at Athal, Dadra, Haridwar, Kolhapur and Chennai, Prince Pipes has the largest manufacturing capacity for its latest product **Corfit DWC*** Pipes.



PRINCETM
PIPING SYSTEMS



*ZERO DEFECT MANUFACTURING PROCESS

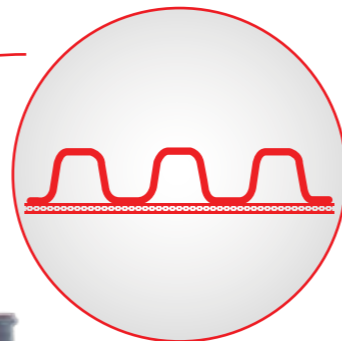
*DWC - Double Wall Corrugated

What is Corfit?

Corfit DWC* Pipes are manufactured using HDPE polymer. These pipes are resistant to various types of gases & chemicals which are generated due to putrefaction of various ingredients flowing in the system.

Corfit DWC* Pipes are manufactured as per IS 16098 (Part-2), have a smooth internal surface and corrugated external surface. The corrugated external surface provides greater stiffness, withstands soil movement & takes higher loads (static & dynamic), whereas the internal surface helps in smooth flow of sewerage.

Corfit DWC* Pipes are available in SN 4 and SN 8 stiffness classes with sizes from 100 mm to 1,000 mm ID. These pipes have a standard length of 6 metre and are available with rubber ring jointings.



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Salient Features of HDPE Material

High Density Polyethylene (HDPE) is a polymer material that is durable, strong and corrosion resistant.



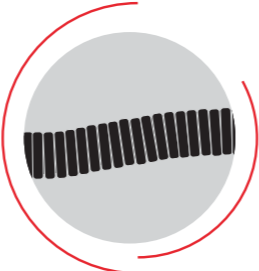
IMPACT RESISTANT



CORROSION & ABRASION RESISTANT



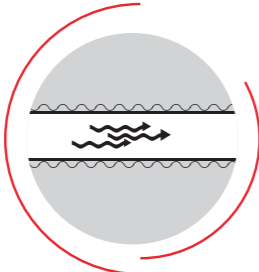
CHEMICAL RESISTANT



FLEXIBLE



LIGHTWEIGHT



HIGH FLOW CAPACITY



WEATHER RESISTANT



RECYCLABLE MATERIAL

Why use Corfit?

Currently, pipes that are widely used for underground non-pressure drainage & sewerage applications are made of RCC & Stoneware (Clay Pipes).

Due to their rigid nature, when embedded, these pipes experience severe stress because of the earth pressure & dynamic load which results in cracks and leads to system failure. In extreme cases, the pipe may collapse.

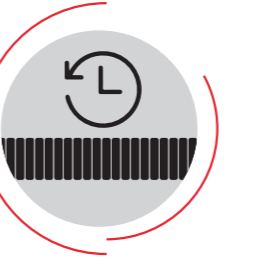
RCC or Stoneware pipes are generally available in 2 metre length thereby leading to more number of joints. As these pipes are heavy, during installation machines are required to lift & lay which is cumbersome.

In comparison to these pipes, **Corfit DWC* Pipes** are the ideal solution which addresses the main concerns of the underground drainage systems. We have enlisted some of the features here -

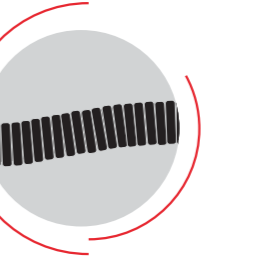
Features of Corfit DWC* Pipes



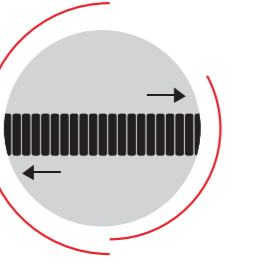
EASY TO HANDLE



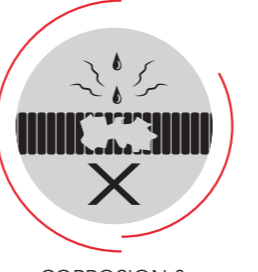
LONG LIFE



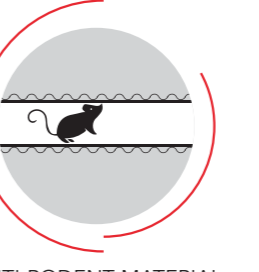
FLEXIBLE



LONG PIPES MINIMUM JOINTS



CORROSION & ABRASION RESISTANT



ANTI-RODENT MATERIAL



ENVIRONMENT FRIENDLY



Material
Only the best and top notch materials are chosen for our products.

Manpower
An experienced team of experts ensure we always deliver the best.

Maintenance
Excellence in service is a habit we strictly follow every time.

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Parameters	DWC (HDPE Double-wall Corrugated) Pipes	RCC Pipes
Length of pipes available	6.0 m	2.0 - 2.5 m
Pipe diameters available	100 - 1000 mm	150 - 600 mm
Pipe material property	Flexible pipe	Rigid pipe
Pipe design (structural property)	Due to its flexibility it allows deformation in diameter as well as in joints under external load and soil natural movement and hence operates years after years without affecting the environment	Due to its rigid nature it could not deform and hence gets damaged under external load or leaks due to natural soil movement at joint. Sewer water could also leach in ground water harming the environment
Pipe jointing	Socket & Spigot joint with elastomeric sealing ring	1. Coller joint with help of cement mortar 2. Socket & Spigot joint with rubber ring and cement mortar
Pipe weight	Very light	Heavy (19-20 times heavy than DWC* pipes)
Pipe roughness coefficient	0.009 Much higher flow rate due to less roughness coefficient and hence during design, pipe diameter requirement is less as compared to concrete & DI pipes	0.014 Lesser flow rate due to more roughness coefficient and hence during designing, pipe diameter requirement will be higher than DWC* pipe
Handling of pipe	Easy due to its light weight	Difficult due to its heavy weight
Corrosion resistance	Highly corrosion resistance	Not resistant to Hydrogen Sulfide gas which is present in all sewer pipes, hence Sulphate resistant cement is used during manufacture
Installation	Good flexibility, low requirements for foundation base for laying, good bending	High rigidity, high requirement for foundation base for laying, not easy to handle & bend, difficult to connect with other pipe
Pipe class	Stiffness class SN 4, SN 8 (Non-Internal Pressure Applications)	NP 1, NP 2, NP 3, NP 4 (Non-Internal Pressure Applications)
Pipe stacking on site	Stacked on plain ground. Smaller diameter pipes can be nested in bigger diameter pipes	Stacked on plain ground seperately. Can not be nested due to its heavy weight
Pipe handling on field	Light weight hence safe in manual handling, has high impact resistance and is non-breakable due to miss handling	Heavy weight hence poor safety during handling, may lead to damage due to mishandling
Working features	High safety under buried installation	Low safety under burried installation
Life time	More than 50 years	Around 15-20 years

Application of Corfit DWC* Pipes

Corfit DWC* Pipes are used for underground applications such as -



UNDERGROUND DRAINAGE



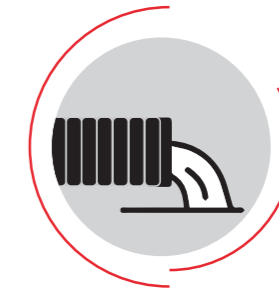
SEWERAGE



STORM WATER & SURFACE WATER DRAINAGE



HIGHWAY & ROAD DRAINAGE



INDUSTRIAL LIQUID WASTE

IS:16098-2



CM/L - 8300122305

Sizes (mm)	ID (mm)	Socket Length (mm)
100	95	32
150	145	43
200*	195	54
250*	245	59
300*	294	64
400*	392	74
500*	490	85
600	588	96
800	785	118
1000	985	140

*License available from 200 to 500 mm only

DWC** RANGE



STIFFNESS CLASS (SN 4 & SN 8)

**DWC - Double Wall Corrugated

Do's & Don'ts

HANDLING

Do's

- 1 Use nylon sling or cushioned cable while unloading from vehicle and while shifting with the help of unloading equipments / devices
- 2 While lifting, the nylon sling / cushioned wire should be wrapped on center 1/3rd portion of the pipe

STORAGE

Do's

- 1 At the site, a storage area should be set aside to keep DWC* Pipes
- 2 Stock the pipes by alternating the direction of the pipe lengths so that the pipe sockets are not stacked on / against each other
- 3 Storage area should be flat, free of large rocks, rough surface and debris

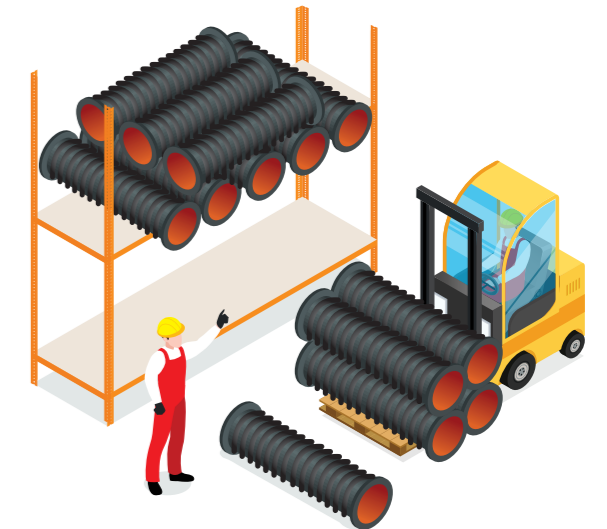
Don'ts

- 1 Do not drop, drag or bump against other pipes or objects during loading, unloading, shifting and jointing
- 2 Do not nest smaller diameter pipes in larger diameter pipes if they can't be removed easily



Don'ts

- 1 The stockpiled height of pipe stacks should not be more than 2.5 metres
- 2 Onsite storage area should not obstruct construction traffic

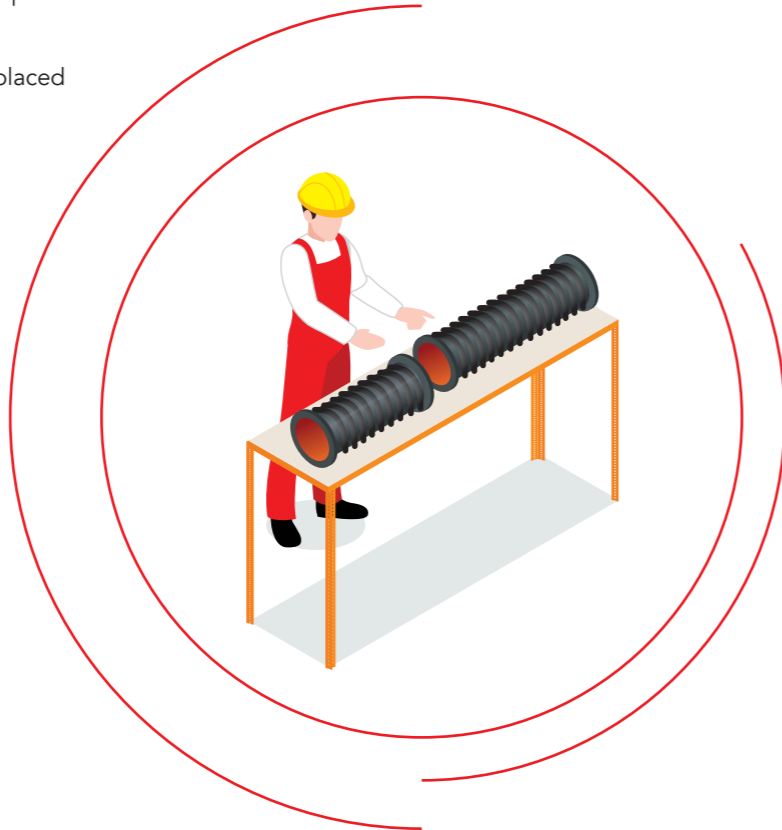


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TRANSPORTATION

Do's

- ① A flat bodied vehicle is ideal for transporting pipes
- ② Layer of pipes with integral socket should be placed with socket protruding alternately
- ③ While stacking pipes ensure that higher diameter pipes are placed at the bottom
- ④ Use nylon sling / cushioned cable while loading in trucks, unloading from trucks, shifting and lowering in trenches at site
- ⑤ While lifting a pipe, the nylon sling / cushioned wire should be wrapped on center 1/3rd portion of pipe



Don'ts

- ① Pipes should not overhang / hang outside the vehicle body
- ② Maximum height while loading should not exceed 2.5 metres





Installation of DWC* Pipes

TRENCH PREPARATION

Sewer Trench width depends on the soil condition, type of side protection and the working space required at the bottom of the trench for smooth installations. Considering all the above factors minimum trench width as per IS 16098 Part 2 is -

Sr. No	Pipe Diameter (mm)	Trench Width (mm)
1	75 to 200	0.6
2	250	0.7
3	300	0.8
4	400	0.9
5	600	1.2
6	800	1.3
7	900	1.6
8	1000	1.8

EXCAVATION

- Sewer trenches should be in straight lines as much as possible
- Instead of conventional manholes, DWC* fittings such as tees and bends should be used at transitions
- Excavated spoils should not be deposited in the proximity to prevent the collapse of the side of the trenches

- The sides of the trench should be supported by shoring (where necessary) to ensure proper and speedy excavations and concurrently ensuring necessary protection to contiguous structures
- Dewatering: Sewer installations trenches should be adequately dewatered for the placement of the pipe at proper gradient till the pipe is integrated through socket and spigot joint with the already laid segment

BEDDING

- For maximum combined loading (Wheel Load + Backfill), any form of cement, concrete structural bedding would not be necessary
- For maintenance of sewer slopes the initial backfill should be enveloped with sand or gravel (as computed through structural design of buried flexible conduit) over a single BFS (Brick flat soling) would be sufficient

LAYING AND JOINTING

- For shallow trenches, place the pipe manually on the initial backfill envelop, directly
- For deep trenches with shoring / mild steel sheet piling

- Make the trench reasonably free from ground water and other liquids
- Place the pipe on the top level cross-struts of the timber shoring / mild steel sheet piling frame work
- Dismantle one / two cross struts and lower layer of the cross-struts and re-fix the struts immediately
- In the same manner, reach up to the initial back filing and place the pipe at proper slope
- Ensure anchorage, if any, after laying

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JOINTING PROCEDURE

Do's

DWC* Pipes are manufactured with built in socket / bell.

- ① Clean the surface of the spigot socket using a cloth
- ② Insert the rubber ring on the spigot end in between two corrugation valleys
- ③ Insert the spigot end into the socket end of pipe
- ④ Connect the jointing jack which is in two halves on DWC* pipe corrugation on socketed end and spigot end of pipe
- ⑤ Insert the rubber ring fitted spigot end of pipe inside the socket with ease with the help of jointing jack
- ⑥ Jointing can be completed within few minutes which is a leak-proof joint

CONSTRUCTION OF BACKFILL ENVELOPE AND BACKFILLING OF THE TRENCHES

- The material for initial backfill envelope should be as per the structural design of flexible buried conduit
- It can be the same material that were removed during excavation or it can be fine sand / coarse sand / gravel depending on the over burden and superimposed load, but it should be the concrete which invariably induces undesired rigidity in the system
- The remaining portion of backfilling shall be the material that were removed during excavation
- These materials shall consist of clean earth and shall be from large clod or stone above 75 mm, ashes, refuse and other injurious materials
- Backfilling should start only after ensuring the water tightness test of joints for the concerned sewer segments. However, partial filling may be done the joints open

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Service Life

Corfit DWC* Pipes have a very long service life, the wear and tear of the inner wall is very low due to the high abrasion resistance of HDPE material.

Under normal working conditions the life expectancy of these pipes is more than 50 years.

Corfit DWC* Pipes are reliable and durable which make these pipes suitable for long term drainage and sewerage applications.



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