Coefficient of Roughness

The smooth surface of cement mortar lining provides a Coefficient of roughness of about 1.4 in Indian and American formulae.

Diameter, Pressure and Length

These pipes can be made from 300mm to 2000mm diameter with 3 metre length and working pressure up to 14MPa cm². Higher diameter pipes are also possible for large requirements.

Reliability

The company has executed around 650 projects with more than 1000 kilometers of these pipe lines in various services like water, gas, sewerage, etc. for irrigation for civil engineering works in many parts of the world. It has also executed a number of projects for international organizations and contractors.

Experience & Certificates

Starting in 1961, with a commitment to supplying quality pipes and installations, the company is now exporting around 700 tonnes of PSC pipes annually with maximum dia. up to 1600 mm and factory test pressure of up to 25 kg/cm².

Our main clients are Water Supply & Drainage Boards, CECOS, Industrial Development Corporation, PMDB, Industrial Development Board, etc. The company has already supplied large quantities of PSC pipes for Private Sector Industries, Farmers Cooperative Societies, and large numbers of Sugar Factories, Paper mills, Power plants, Steel plants, etc.

Certification of some important works are reproduced for ready reference. MP Pipe was awarded a contract to supply 1500000 m³ of PSC pipes for a prestigious water supply project in the city of Yangon, Myanmar.

Design Concept

Prestressed concrete pressure pipes are designed to withstand all the stresses that the design engineer expects during service. Pipes must withstand the internal working pressure including water hammer effects and vacuum pressures.

When a pipe is subjected to pressure, tensile stresses are created in the pipe wall. Compressive strength of concrete is remarkably high but the tensile strength is poor. To get the best advantage, the core concrete is kept in compression under normal working pressures.

The objective of initial prestressing is to produce uniform compressive stresses in pipe wall to offset tensile stresses resulting from internal pressure, load and live loads.

Concrete Advantages

- HIGH DURABILITY AND LOW COST
  The prime objective governing design and construction practice is durability and low cost. Water content ratios of RMC concrete and mortar are optimised and concrete compressive strengths for cores and coating mortar are selected to suit local soil conditions and materials. The resulting prestressed concrete is a highly durable material.
  - RMC concrete is used in precast or pre-stressed pipes to provide load-bearing capacity. It is used under good load-bearing capacity as a result of its better quality.

Joint Design

Water tightness between two pipes is ensured by a rubber ring conformity is designed perfectly. For the time of joining, the rings, placed in groove, is compressed between the joint surfaces. During the joining operation, the top surface of the joint remains perfectly efficient during the service. Water tightness between two pipes is ensured by a rubber ring conformity is designed perfectly. For the time of joining, the rings, placed in groove, is compressed between the joint surfaces. During the joining operation, the top surface of the joint remains perfectly efficient during the service.

External load carrying capacity

For our country, for drainage and culverts, PSC Pipes of NPC, MP, MC and MP-CH classes are used and are giving excellent services. PSC Pipes can also be designed for any load combinations because of unique combination of durability of outer concrete and high tensile wire, which will result in an economical pipeline under heavy external loads.
**Coefficient of Roughness**

The smooth surface of cement mortar lining provides a Coefficient of roughness Cn of 140 in Indian and Williams formula.

**Diameter, Pressure and Length**

These pipes can be made from 300mm to 2000mm in diameter with 5 meter length and working pressure up to 14MPa cm². Higher diameter pipes are also possible for large requirements.

**Reliability**

The company has executed around 685 projects with more than 1000 kilometers of these pipe lines in service on all kind of pumping / gravity mains for carrying raw / treated / industrial or waste water.

**Experience & Certificates**

Starting in 1967, with a commitment to supply quality pipes and installation works, presently, the company is executing around 750 tons of PSC pipes annually with maximum dia. of 1000 mm and factory test pressure up to 25 kg/cm².

Our major clients are Water Supply & Drainage Board, CILCO, Industrial Development Corp., PEDA, Industrial Estates, etc. The company has already supplied and installed huge quantities of PSC pipes for Private Sector Industries, Farmers Cooperative Societies, including huge numbers of Sugar Factories, Paper Mills, Sugar Mills, Steel Mills, etc.

Certificates of some important works are reproduced for ready reference. MPF was appointed as consultant to HWDSB for manufacture of PSC pipes for a prestigious water supply work in the city of Harangiri, Myanmar.

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**Design Concept**

 Prestressed concrete pressure pipes are designed to withstand all the stresses that the design engineer expects during service. Pipes must withstand the internal working pressures including water hammer effects and vacuum pressures.

When a pipe is subjected to pressure, tensile stresses are created in the pipe wall. Compressive stress of concrete is remarkably high but the tensile strength is poor. To get the best advantage, the core concrete is kept in compression under normal working pressures.

The objective of initial prestressing is to produce uniform compressive stresses in pipe wall to offset tensile stresses resulting from internal pressure, load and live loads.

**Concrete Advantages**

High Durability and Low Cost

The prime objectives governing design and construction practices are durability and low cost. Water content ratios of HIP pipes in concrete and mortar are optimum and concrete compression methods for core and coating mortar are most efficient. Robust standard specifications and codes cover selection and use of materials. These resources are supported by extensive research with a comprehensive quality control program, for water tightness, structural and dimensional checks.

PSC pipes can be designed for any combination of working pressure and external loads operating under the actual load conditions and this leads to economical pipelines.

Fast and Simple Installation

Installation of PSC Pipes is simple, rapid and easy with minimum efforts.

The inherent rigidity and robustness of HIP pipes eliminates the need for special precautions necessary for pipes with flexible materials and asbestos coatings.

**Built-in Advantages**

- **PSC pipes** do not require any action by the operator as they are right pipes.
- **PSC pipes** have high crushing and beam strengths and are suitable for installation in most positions, both below and above ground.
- **PSC pipes** have good longitudinal and diagonal stiffness and do not normally require any special fitting. Their interior surface remains smooth, guaranteeing sustained high carrying capacity for the lifetime of the pipe.

**External Load carrying capacity**

In our country, for drainage and culverts, HIP Pipes of HP, MP and HIP classes are used and are giving excellent service.

PSC Pipes can also be designed for any load combinations because of unique combination of durability of plain concrete and high tensile wires, which will result in an economical pipeline under heavy external loads.
Coefficient of Roughness

The smooth surface of cement mortar lining provides a Coefficient of roughness of 1.45 in Indian and other formulas.

Diameter, Pressure and Length

These pipes can be made from 300mm to 2000mm diameters with a maximum length and working pressure up to 14MPa cm². Higher diameter pipes are also possible for large requirements.

Reliability

The company has executed around 650 projects with more than 10000 kilometers of pipelines in service without failure in pumping / gravity mains for carrying raw / potable / industrial or waste water.

Experience & Certificates

Starting in 1961, with a commitment to supply quality pipes and installation works, presently, the company is executing around 750 tons of PSC pipelines annually with maximum dia. of 1600 mm and factory test pressure up to 20 kg/cm².

Our major clients are Water Supply & Drainage Boards, CBGCO, Industrial Development Corp., Prades, Indraprasth, etc. The company has already supplied large quantities of PSC pipelines for Power Sector Industries, Ministry of Civil Aviation, Oil & Natural Gas Corporation Ltd., Reliance Industries Ltd., etc.

Certificates of some important works are reproduced for ready reference. PSC was awarded the best award in 1982 by PDMA for manufacture of PSC pipes for a prestigious water supply work to the city of Haridwar, Harayana.

Design Concept

 Prestressed concrete pressure pipes are designed to withstand the stresses that the design engineer expects during service. Prestress can resist the external working pressures including water hammer effects and vacuum pressures.

When a pipe is subjected to pressure, tensile stresses are created in the pipe wall. Compression strength of concrete is remarkably high but the tensile strength is poor. To get the best advantage, the core concrete is kept in compression under normal working pressures.

The objective of initial prestressing is to produce uniform compressive stresses in pipe wall to offset tensile stresses resulting from internal pressure, load and buoyancy.

Joint Design

Water tightness between two pipes is ensured by a rubber ring conforming to Indian Standard specifications. At the time of joining, the ring placed in groove is compressed between the joint surfaces of the spigot and socket. Internal pressure further increases the compression of the rubber ring and the water tightness of the joint remains perfect and efficient for various conditions during the service. The jointing operation is a very simple one and it is sufficient to introduce the spigot, fitted with the rubber ring, into the pipe socket and to apply two turns with means of a lever/handle or any other device. The water tightness of the pipeline is examined when two tests are carried out at site.

Concrete Advantages

HIGH DURABILITY AND LOW COST

The prime objective governing design and construction practices are durability and low cost. Water content ratios of PSC and mortar are optimum and concrete companion material for core and casing material are most efficient. Relevant standard specifications and codes cover selection and use of materials. These measures are supported by extensive research with a comprehensive quality control program, for water tightness, structural and dimensional checks.

PSC Pipes can be designed for any combination of working pressure and external loads depending upon the actual load conditions and this results in economical pipelines.

FAST AND SIMPLE INSTALLATION

Installation of PSC Pipes is simple, rapid and easy with minimum efforts. The inherent rigidity and robustness of PSC pipes eliminates the need for special precautions necessary for pipes with flexible materials and asbestos coatings.

BUILT-IN ADVANTAGES

- PSC pipes do not require special provision for insulation as they are light weight pipes.
- PSC pipes have high crushing and beam strengths and are suitable for installation in most locations, both below and above ground.
- PSC pipes have good abrasion resistance and do not require any special lining. Their interior surface remains smooth, guaranteeing sustained high carrying capacity for the lifetime of the pipe,

External load carrying capacity

In our country, for drainage and utilities, PSC Pipes of NFC, MFC and MDP classes are used and are giving excellent services.

PSC Pipes can also be designed for any load combinations because of unique combination of durability of spout concrete and high tensile wires, which will result in an economical pipeline under heavy external loads.
**Coefficient of Roughness**

The smooth surface of cement mortar lining provides a Coefficient of roughness of 140 in Indian and William formula.

**Diameter, Pressure and Length**

These pipes can be made from 300 mm to 2000 mm diameter with 1 meter length and working pressure up to 14 kg/m². Higher diameter pipes are also possible for large requirements.

**Reliability**

The company has executed around 650 projects with more than 7000 kilometers of these pipe lines in service all over India. It pumping / gravity mains for carrying raw / potable / industrial / waste water, etc.

**Experience & Certificates**

Starting in 1981, with a commitment to supply quality pipes and installation works, presently, the company is executing around 720 tons of PVC pipelines annually with maximum dia. of 1000 mm and factory test pressure of 12 kg/cm².

Our main clients are Water Supply & Drainage Board, CIDCO, Industrial Development Corps, PWDs, Irrigation Dept., etc. The company has already supplied and installed large quantities of PVC pipelines for Power Sector industries, Farmers Cooperative Societies, including good numbers of Sugar Factories, Paper mills, Power plants, Steel plants, etc.

Certificates of some important works are reproduced for ready reference.

**Concrete Advantages**

**HIGH DURABILITY AND LOW COST**

The prime objective governing design and construction practices are durability and low cost. Water content ratios of RHP concrete and mortar are optimum and cement content is maintained within limits. The entire process of production is controlled by computerized quality control machines, for water tightness, structural and dimensional checks.

**FAST AND SIMPLE INSTALLATION**

Installation of PVC pipes is simple, rapid and easy to install. The inherent rigidity and robustness of PVC pipes eliminates the need for special precautions necessary for pipes with flexible materials and jointing methods.

**BUILT-IN ADVANTAGES**

- PVC pipes are not affected by corrosion of any kind to provide leakage support in rainwater pipe systems.
- PVC pipes have high crushing and burst strengths and are suitable for installation in moist locations, both below and above ground.
- PVC pipes have good abrasion resistance and do not normally require any special treatment. Their interior surface remains smooth, guaranteeing sustained high carrying capacity for the lifetime of the pipe.

**External load carrying capacity**

In our country, for drainage and culverts, PVC Pipes of IPS, NAT and IJP classes are in use. PVC pipes are available in IPS, NAT and IJP classes.

**Design Concept**

Prefabricated concrete pressure pipes are designed to withstand the stresses that the design engineer expects during service. Pipes must withstand the internal working pressures including water hammer effects and vacuum pressures.

When a pipe is subjected to pressure, internal stresses are created in the pipe wall. Compressive stress at the concrete is remarkably high but the tensile stress is zero. To get the best advantage, the core concrete is kept in compression under normal working pressure.

The objective of initial prefabricating is to produce uniform compressive stress in pipe wall to offset tensile stresses resulting in internal pressure, load and live loads.

**Joint Design**

Water tightness between two pipes is ensured by a rubber ring confirming to Indian standards specifications. At the time of joining, the ring, placed in groove, is compressed between the joint surfaces of the socket and spigot. Internal pressure increases the compression of the rubber ring and the water tightness of the joint remains perfectly efficient during the service. The joining operation is a very simple one and it is sufficient to introduce the spigot, fitted with the rubber ring into the pipe socket and to pull them home by means of a lever/handle or any other device.

The water tightness of the pipeline is closely examined when two tests are carried out at site.

**The main features of pipe**

The core of the pipe is made of high performance, dense concrete by the spinning process, being followed in many of the developed countries.

The process allows the use of concrete with very low water cement ratio resulting in high strength, dense and durable concrete. The minimum 28 days compressive strength is 40 MPa. Winding of H.T. steel wire with accurate pitch and at controlled tension is an important feature of the process. H.T. steel wire is wound around a mandrel, protected and bonded by a cement bond, and is cast in place as part of the pipe wall.

**The Indian Hume Pipe Co. Ltd.**

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