The Indian Hume Pipe Co. Ltd.

Introduces Internationally Acclaimed
PRESTRESSED CONCRETE CYLINDER PIPES (PCCP)

PROVEN PIPES FOR MANY DECADES OF TROUBLE-FREE SERVICE FOR HIGH PRESSURE, TIGHT & GRAVITY MAINS

For further details, demonstration contact:
The Indian Hume Pipe Co. Ltd.
Registered Office: Construction House, S. Wadhwani Industrial Estate, Mumbai 400 030.
Tel: +91 (022) 26745301/02, Fax: +91 (022) 26745353/55
E-mail: info@indianhumepipe.com
Website: www.indianhumepipe.com

The Indian Hume Pipe Co. Ltd.

The Prestressed Concrete Cylinder pipe introduces the best use of concrete & steel. The composite action of steel cylinder, concrete core, H.T. wire and coating ensures makes the pipe right. Prestressed Concrete Cylinder pipe proves techno-economical as compared to metal pipes.

THE PIPE

A Prestressed Concrete Cylinder is fabricated and welded with thick steel joint rings at both the ends. The cylinder is then hydrostatically tested. Concretes are then centrifugally applied inside the cylinder which is called core of the pipe. After drying of core, high tensile (HT) wire is wound around the steel cylinder, bringing the core in compression. The steel cylinder and HT wire are covered with rich cement mortar with high-impact resistance.

CONCRETE CORE

The core is of high compressive strength concrete, brought in compression.

STEEL CYLINDER

High density coating with high tensile steel wire to prevent splitting and maximum tightness to the cylinder guarantees a completely water-tight service.

STEEL JOINTS

High tensile wires and steel joint reinforcement ensure rigidity.

CONCRETE JOINT

The joint region is made of thicker steel plates. The field joints can be sliding overlap weld or rubber ring joints to suit the requirements of the client. The parts are so designed that they will not leak under severe service conditions.

ECONOMICAL FIRST COST

It is the most economical in comparison with conventional steel pipes with protective mortar coating. Being strong and cost-effective, its use is recommended for all applications.

TRACK RECORD

These pipes have given excellent service for water supply, irrigation and sewage disposal for more than 60 years in the USA and Europe.

DIAMETER AND PRESSURE

These pipes can be made from 630 mm to 1830 mm diameter for working pressures up to 16 bar. They can be made in accordance with all requirements. Bigger diameter pipes are also possible for large requirements. These pipes are manufactured conforming to EN-754. Conformity of the pipes is carried out as a matter of course.

EQUIPPED USE OF STEEL

Prestressed Concrete Cylinder pipe immersed use of concrete & steel. The composite action of steel cylinder, concrete core, H.T. wire and coating ensures makes the pipe right. Prestressed Concrete Cylinder pipe proves techno-economical as compared to metal pipes.

JOINT SPACE

The inner joint surface of the pipe is covered with rich cement mortar. The outer joint is created by use of a rubber strip on the ends to aper water leakage. The wet cement mortar grout is poured from one side of the opening at the top of the pipe until grout has advanced completely around the pipe.

ADVANTAGE OF MORTAR COATING

- The steel which is more prone to the galvanic corrosion gets protected due to rich cement mortar coating at the inner surface of the pipe in a better manner, in many cases, characteristics.

MAINTENANCE

Survey made by AWWA in USA identifies that there is hardly any maintenance required for Prestressed Concrete Cylinder pipes.

EXTERNAL LOAD STRENGTH

Conventional steel pipes can reflect significantly under external loads such as those are flexible pipes. Steel pipes depend upon the soil support on each side to resist horizontal deflection. To achieve proper corrosion control equipment, careful supervision by the contractor and regular inspection by the owner are very much essential. This will result in substantial additional cost compared to prestressed Concrete Cylinder pipes which are right.

EXTERNAL MORTAR COATING

The external mortar coating of Prestressed Concrete Cylinder pipe is a rugged shield that protects the pipe and increases its strength and rigidity.

EXCELLENT FLOW CHARACTERISTICS

The outer surface of a prestressed Concrete Cylinder pipe is very smooth and corrosion-free. The highly alkaline concrete protects the outer surface and prevents internal corrosion which is customary with Steel Pipes. The spun concrete surface gives high Z values in HAN equation and reduces cost of pumping in rising mains.
CORROSION RESISTANCE
The cement mortar envelope maintains steel elements in a highly alkaline environment (pH of 12.5 or greater) in which galvanic corrosion is permanently inhibited.

ECONOMICAL FIRST COST
In most situations prestressed concrete cylinder pipes are substantially economical in comparison with steel pipes with protective inner mortar lining and cementing as per BSI 181.9 and BS EN 957. Iron pipes with mortar lining and proper coating outside,

TRACK RECORD
These pipes have given excellent service for water supply, irrigation and sewerage disposal for more than 65 years in the USA and Europe.

DIAMETER AND PRESSURE
These pipes can be made from 600 mm to 2000 mm diameter for working pressures up to 2.5 kg/cm² as per requirements. Bigger diameter pipes are also possible for large requirements. These pipes are manufactured conforming to BS 5894, Common European Standard EN12245 or American Water Works Association Standard ANSI A10.123.

For further details and demonstration contact
The Indian Hume Pipe Co. Ltd.
Raja's Office, Constitution House, S. Vaddel and Herad Road, Bandra East, Mumbai-400 051.
Phone: 022-22630501 Fax: 022-22638093 Email: info@indianhumepipes.com
Website: www.indianhumepipes.com

THE PIPE
A 16 mm thick cylinder is fabricated and welded with thick steel joint rings at both the ends. The cylinder is then hydrostatically tested. Concrete is then centrifugally applied inside the cylinder which is called core of the pipe. After setting of core, high tensile H7 wire is wound around the steel cylinder, bringing the core in compression. The steel cylinder and H7 wire are covered with rich cement mortar with high lime content process.

CONCRETE CORE
The core at a high Compression strength is brought to the formation

STEEL CEMENTER
Metallic coating with external pressure to prevent fire is kept maximum heat which in turn increases the strength of the core

THE JOINT
A joint without mortar is made by a flanged joint, a steel sleeve, and a steel ring

CONCRETE JOINT
A joint with high strength is made by a flanged joint with a steel sleeve and a steel ring

PRODUCTION
The pipe is made in a prefabricated workshop with a continuous process.

EFFICIENT USE OF STEEL
Prestressed Concrete Cylinder pipe makes optimum use of concrete & steel. The composite action of steel cylinder, concrete core, H7 wire and cement coating makes the pipe rigid. Prestressed Concrete Cylinder pipe proves techno-economical as compared to metal pipes.

JOINT SPACE
The inner joint surface of the pipe is covered with rich cement mortar. The outer joint is grouted by use of a wrapper stripped around the pipe and over the joint. The wet cement mortar grout is passed from one side of the opening at the top of the pipe until grout has advanced completely around the pipe.

ADVANTAGE OF MORTAR COATING
- The steel is more resistant to the galvanic action gets associated due to H7 wire and coating, which in turn boosts enhanced more bond characteristics.

MAINTENANCE
Survey made by ANWA in USA identified that there is hardly any maintenance required for Prestressed Concrete Cylinder pipes.

EXTERNAL LOAD STRENGTH
Conventional steel pipes can sustain significantly lower external loads than those are flexible pipes. Steel pipes depend upon the soil support on each side to resist horizontal deflection. To achieve proper construction special equipments, careful supervision by the contractor and regular inspection by the owner are very much essential. This will result in substantial additional cost compared to prestressed Concrete Cylinder pipes which are light.

EXTERNAL MORTAR COATING
The external mortar coating of Prestressed Concrete Cylinder pipe is a rugged shield that protects the pipe and increases its strength and rigidity.

EXCELLENT FLOW CHARACTERISTICS
The interior surface of a prestressed Concrete Cylinder pipe is very smooth and corrosion free. The highly alkaline concrete protects the interior surface and prevents internal corrosion which is customary with Steel Pipes. The spun concrete surface gives high "C" values in NVA equation and reduces cost of pumping and rising mains.
CORROSION RESISTANCE
The cement mortar envelope maintains steel elements in a highly alkaline environment (pH of 12.5 or greater) in which galvanic corrosion is permanently inhibited.

ECONOMICAL FIRST COST
In most situations prestressed concrete cylinder pipes are substantially economical in comparison with conventional steel pipes which have a protective cement mortar lining and are consequently more expensive.

TRACK RECORD
These pipes have given excellent service for water supply, irrigation and sewage disposal for more than 50 years in the USA and Europe.

DIAMETER AND PRESSURE
These pipes can be made from 300 mm to 1800 mm diameter for working pressures up to 16 kg/cm² as per requirements. Bigger diameter pipes are also possible for large requirements. These pipes are manufactured conforming to BS 744 Common European Standard EN1262 or American Water Works Association Standard ANSI C 303-2000.

THE PIPE
A 30° steel cylinder is fabricated and joined with thick rubber gasket rings at both the ends. The cylinder is then hydrostatically tested. Concrete is then centrifugally applied inside the cylinder which is called core of the pipe. After curing of core, high tensile (HT) wire is wound around the steel cylinder, bringing the core in compression. The steel cylinder and HT wire are covered with rich cement mortar with high impedance process.

CONCRETE CORE
The core is a high compression strength material which prevents seepage through the pipeline.

STEEL CYLINDER
Methodology of high pressure water test is employed to prevent welding of steel, minimum heat at the weld to maintain continuity of stress-free cross section.

JUNCTIONS
The joints are made of thicker steel plates. The field joints are of slip-on overlap weld or confined rubber ring joints to suit the requirements of the client. The parts are so designed that they within water tight under all service conditions.

EFFICIENT USE OF STEEL
Prestressed Concrete Cylinder pipe makes optimum use of concrete & steel. The composite section of steel cylinder, concrete core, H.T. wire and coating (mortar) makes the pipe rigid. Prestressed Concrete Cylinder pipe proves technically economical as compared to metal pipes.

JOINT SPACE
The inner joint surface of the pipe is covered with rich cement mortar. The outer joint is grouted by use of a proper grout around the pipe and over the joint. The wet cement mortar is forced from one side of the opening at the top of the pipe until grout has achieved complete around the pipe.

ADVANTAGE OF MORTAR COATING
- The steel pipe is more prone to the galvanic corrosion as mentioned above. Galvanic corrosion is a type of corrosion which is more prone to mechanical and metal parts.

MAINTENANCE
Survey made by AWWA in USA identified that there is hardly any maintenance required for Prestressed Concrete Cylinder pipelines.

EXTERNAL LOAD STRENGTH
Conventional steel pipes are subject significantly lower external loads than these are flexible pipes. Steel pipes depend upon the soil support on each side to resist horizontal deflections. To achieve proper corrosion control equipments, careful supervision by the contractor and regular inspection by the owner are very much essential. The soil added is substantial additional cost compared to prestressed Concrete Cylinder pipes which are rigid.

EXTERNAL MORTAR COATING
The external mortar coating of Prestressed Concrete Cylinder pipe is a rugged shield that protects the pipe and increases its strength and rigidity.

EXCELLENT FLOW CHARACTERISTICS
The interior surface of a prestressed Concrete Cylinder pipe is very smooth and corrosion free. The highly alkaline concrete protects the interior surface and prevents internal corrosion which is customary with Steel pipes. The smooth concrete surface gives high “C” values in KVA equation and reduces cost of pumping in rising mains.
**Corrosion Resistance**
The cement mortar envelope maintains steel elements in a highly aggressive environment, with a pH of 12.5 or greater, in which galvanic corrosion is permanently inhibited.

**PCCP**

**Introduces Internationally Acclaimed**

**PRESTRESSED CONCRETE CYLINDER PIPES (PCCP)**

**Economical First Cost**
In most situations, prestressed concrete cylinder pipes are substantially more economical in comparison with conventional steel pipes with protective cement mortar lining and excluding per 15818 and BS5401, iron pipes with mortar lining, and proper coating outside.

**Track Record**
These pipes have given excellent service for water supply, irrigation, and sewerage disposal for more than 60 years in the USA and Europe.

**Diameter and Pressure**
These pipes can be made from 632 mm to 1829 mm diameter for working pressures up to 1.0 megapascal per requirements. Bigger diameter pipes are also possible for large requirements. These pipes are manufactured conforming to BS 7444, Common European Standard EN542 or American Water Works Association Standard AWWA C-103.

For further details, demonstration contact:

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

Address: Off. 201, 2nd Floor, Mohan Complex, Vadodara, Gujarat 390007

Website: www.indianhumepipe.com

**The Pipe**
A 14 x 1.5 mm steel cylinder is fabricated and welded with thick steel joint rings at both the ends. The cylinder is then hydrostatically tested. Concrete is then centrifugally applied inside the cylinder which is called core of the pipe. After setting of core, high tensile (HT) wire is wound around the steel cylinder, bringing the core in compression. The steel cylinder and HT wire are covered with rich cement mortar with high impermeability properties.

**Concrete Core**
The core is at high pressure to maintain lining strength under bearing pressure.

**Stainless Steel**
High-strength welding with high pressure to prevent welding defects, maximum tensile stress in the stainless steel, and avoidance of welding stresses,.

**Concrete Mortar Coating**
Applicability of high-performance, high-strength cement-mortar coating ensures excellent water tightness,;

**High Strength Steel**
High-strength steel provides high tensile strength,;

**Joint**
Joints are made of high-strength steel and rubber ring joints to suit the requirements of the client. The joints are so designed that they withstand water tightness under severe conditions.

**Choice of Joint**
The joints are made of thicker steel plates. The field joints can be sliding overlap weld or confined rubber ring joints to suit the requirements of the client. The joints are so designed that they withstand water tightness under severe conditions.

**Efficient Use of Steel**
Prestressed Concrete Cylinder pipe makes optimum use of concrete & steel. The composite action of steel cylinder, concrete core, H.T. wire, and coating ensures makes the pipe rigid. Prestressed Concrete Cylinder pipe proves techno-economical as compared to metal pipes.

**Joint Space**
The inner joint surface of the pipe is covered with rich cement mortar. The exterior joint is grouted by use of a grout pump around the pipe and over the joint. The wet cement mortar grout is poured from one side of the opening at the top of the pipe until the joint has achieved complete around the pipe.

**Advantage of Mortar Coating**
- The steel which is more prone to the galvanic corrosion gets passivated due to H.T. wire and mortar coating;
- The galvanic is further reduced in more traffic circumstances.

**Maintenance**
Survey made by AWSA in USA identified that there is hardly any maintenance required for Prestressed Concrete Cylinder pipes.

**External Load Strength**
Conventional steel pipes can react significantly under external loads as these are flexible pipes. Steel pipes depend upon the soil support on each side to resist horizontal deflection. To achieve proper compression, special equipments, careful supervision by the contractor and regular inspections by the owner are very much essential. This will result in substantial additional cost compared to Prestressed Concrete Cylinder pipes which are rigid.

**External Mortar Coating**
The external mortar coating of Prestressed Concrete Cylinder pipe is a rugged shield that protects the pipe and increases its strength and rigidity.

**Excellent Flow Characteristics**
The interior surface of a prestressed Concrete Cylinder pipe is very smooth and corrosion free. The highly alkaline concrete protects the interior surface and prevents internal corrosion which is customary with steel pipes. The spun concrete surface gives high "C" values in PVN equation and reduces cost of pumping in rising mains.