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PIPE AND IJS SOLUTION FOR MICRO TUNNELING PROJECTS.

NO.1 CHOICE OF EXPERTS

BILGE

BILGE solutions

HISTORY OF HUME PIPE

Walter Reginald Hume (1873-1943) from Australia is the inventor of Hume Pipe in 1910.

A hume pipe is a concrete tube with reinforced bar. It is formed by pouring concrete into a formwork, and axially rotating it, and allowing it to compact using centrifugal force.

RCC Hume pipe refers to Reinforced Cement Concrete pipes. The Hume/Spun process is widely used in un - developed and developing countries. Generally these pipes are used for sewage and drainage purposes.

Many pipe producers are gradually shifted or shifting from Hume/ Spun process to latest Vertical cast process

BILGE
solutions

ABOUT US

Partners having vast experience in the manufacturing of RCC Hume Pipes. Into the business since 1950's.

Under the flagship of Bilge Solutions first state of the art factory established in 2018 in Palashdanga, Burdwan, West Bengal.

First organisation to start manufacturing of RCC Hume Pipes with adoption of vertical dry cast manufacturing process in Eastern India.

Setting up of second factory in Birpara, Alipurduar - commenced manufacturing from December 2023.

We are dwelling into continuous improvement in our deliverables in terms of product quality and diversification.

WHY US ?

Bilge Solutions is the premier choice for Hume pipe and jacking pipe manufacturing, paired with expert Micro tunneling services. Our commitment to quality, innovation, and customer satisfaction sets us apart. With state-of-the-art facilities and a team of skilled professionals, we deliver top-notch products and precise Micro tunneling solutions that meet the most demanding project requirements. Our expertise ensures minimal environmental impact, reduced project timelines, and maximum efficiency. By choosing Bilge Solutions, clients benefit from a one-stop-shop for all their piping and Micro tunneling needs, backed by unparalleled support and expertise. Trust us to deliver exceptional results that exceed your expectations. Experience the Bilge Solutions difference - quality, precision, and reliability that drives your projects forward.

VERTICAL DRY CAST METHOD VS SPINNING METHOD OF PRODUCTION WHY WE CHOSE VERTICAL

Disadvantage of spinning Method

- Involvement of multiple unskilled human effort, causes deflection of desired quality.
- Non uniform compaction.
- Larger aggregates towards outside, finer sands and light materials at inside surface.
- Non-uniform crushing strength at jacking surface.
- Tendency to find craze cracks at inner pipe surface.
- Rough and stony collar back walls and seam areas.
- Thin spigot making it vulnerable to damage.
- Limitation of production capacity.

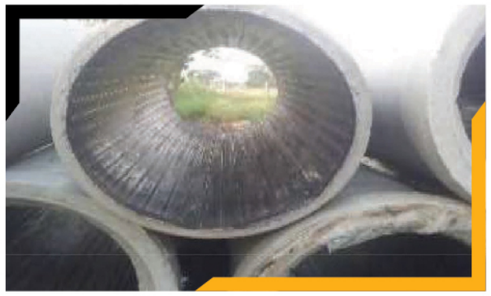
Advantage of Vertical of Cast Method

- We can manufacture different shapes of pre-cast product (i.e- Rectangular, Conical U-shape, Triangle)
- Homogeneous compaction.
- Each pipe is produced with dry mix concrete. Uniform material distribution
- Spigots are formed by applying a profile ring which ensures a strong well compacted and accurate casting each the initial casting process.
- Uniform crushing strength at jacking surfaces.
- Uniform concrete at surface cosmetic cracking.
- No leakage and resulting stony surface areas.
- Spigot receives efficient dry cast pressing & compaction.
- Vibration casting uses a high grade, low water cement ratio concrete giving a high strength to the end product.
- The concrete in the mould is compacted under the external surface is formed by moulds thereby totally eliminating the human element and giving a high quality pipes.

OUR PRODUCTS

RCC Pipes

JACKING Pipes



HDPE Lined Pipes

U Drains

Box Culverts

Manholes

JACKING PIPE

RCC jacking pipe refers to a trenchless construction technique used to install pipes underground without excavating the soil.

And jacking pipe, also known as a RCC pipe, is a specialized device used to push pipes through the ground.

It consists of:

- A steel cylinder (jack) with a hydraulic system.
- A thrust ring or shoe at the front, which contacts the pipe.
- A rear plate or reaction plate, which provides resistance.

Advantages

- Minimal excavation and surface disruption.
- Reduced environmental impact.
- Faster installation compared to traditional open-cut methods.
- Suitable for congested urban areas or environmentally sensitive zones.

Typical Applications:

- Water and sewage pipelines.
- Gas pipelines.
- Telecommunication cables.
- Electrical utilities.

INTERMEDIATE JACKING STATION (IJS) PIPE

Increased pushing distance : Intermediate jacking pipes allow for longer pushing distances, enabling the installation of longer pipe sections without the need for additional receiving pits.

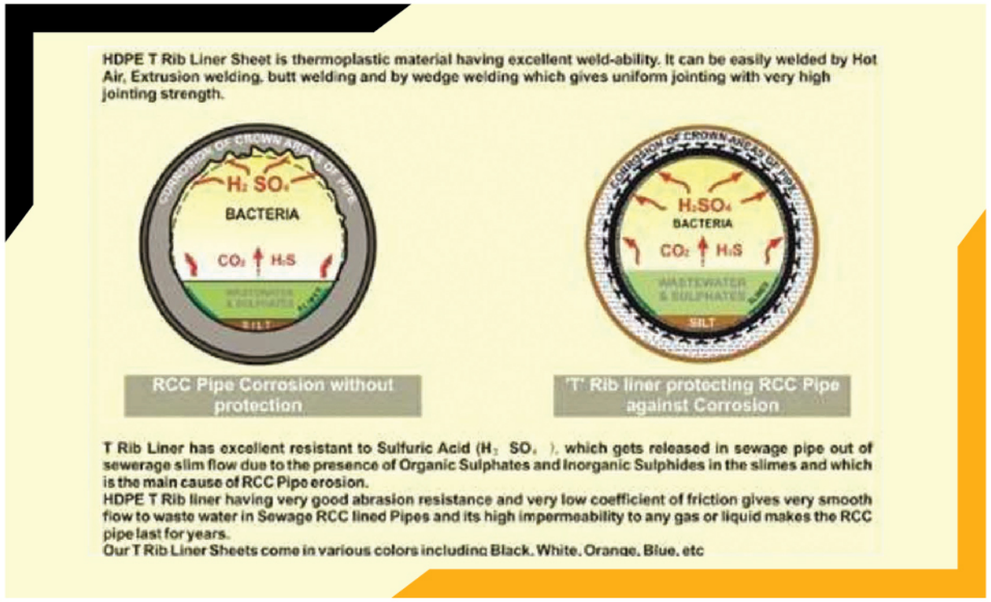
Reduced friction : By providing an additional pushing point, intermediate jacking pipes reduce friction between the pipe and surrounding soil, making it easier to push the pipe. Improved control: Intermediate jacking pipes offer better control over the pipe's movement and direction.

Enhanced safety: By reducing the force required to push the pipe, intermediate jacking pipes minimize the risk of pipe damage, injury, or accidents.

Faster installation & Reduced surface disruption : Intermediate jacking pipes can speed up excavation.

HDPE LINED PIPE

HDPE (High-Density Polyethylene) liner is considered a must in concrete pipes for several reasons:



Corrosion protection: HDPE liner prevents corrosion of the concrete pipe from acidic or al kaline substances in the fluid being transported.

Leak prevention: HDPE liner helps prevent leaks and cracks in the concrete pipe, ensuring a tight and secure system.

Abrasion resistance: HDPE liner protects the concrete pipe from abrasion caused by flow ing materials, extending its lifespan.

Chemical resistance: HDPE liner resists chemical reactions with the fluid being transported, ensuring the pipe's integrity.

Smooth surface: HDPE liner provides a smooth surface, reducing friction and allowing for easier flow.

Long-term durability: HDPE liner extends the lifespan of the concrete pipe, reducing maintenance and replacement costs.

Cost-effective: HDPE liner is a cost-effective solution compared to replacing damaged concrete pipes.

Environmental protection: HDPE liner prevents contamination of soil and groundwater by preventing leaks and spills.

The HDPE liner acts as a barrier between the concrete pipe and the fluid being transported, ensuring the pipe's integrity, durability, and performance.

RCC U-DRAIN

U-Channel drains and saucer drains for storm water drainage systems can be precast in sections. We can design these drains as per the site requirements of clients, and manufacture them in sections to allow for easy laying.

Features:

- Manufactured with M - 30 grade of concrete by vibrated
- compaction process
- Suitably reinforced to promote long life
- For Jointing, it is recommended to fill the joint between two adjacent drains with cement mortar.
- The drain should be laid on a properly compacted base
- Heavier drains are provided with lifting nuts

Precast Concrete Ducts / Boxes:-

Precast concrete ducting is a system that allows for the accommodation of a number of different services from multiple utility and building providers.

Advantages

- All utility in the city under one network, such as Telephone, Power Cable, Internet, Gas, Sewage and Storm.

Applications:

- Drainage
- Water Supply and Irrigation
- Sewerage
- Cable management

RCC Manhole:

Precast manholes offer numerous advantages over traditional cast-in-place manholes:

STRUCTURAL ADVANTAGES:

Faster Installation: Precast manholes can be installed quickly, reducing construction time.

Higher Strength: Factory-made precast concrete provides consistent, high-strength structures.

Durability: Precast manholes resist deterioration, corrosion, and chemical attacks.

Reduced Labor Costs: Faster installation minimizes labour expenses.

Lower Material Costs: Factory production optimizes material usage.

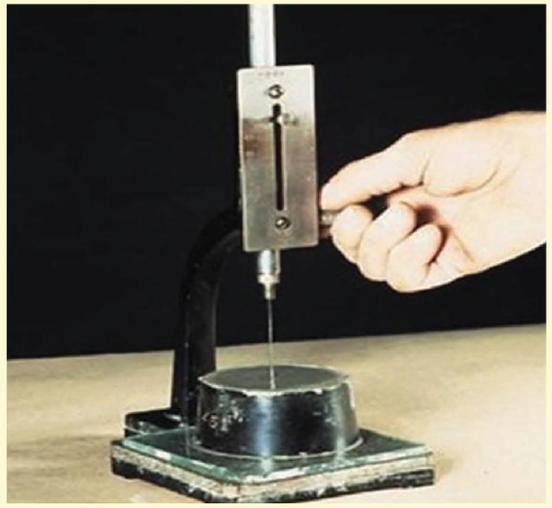
Minimized Site Disruption: Less excavation and backfill required.

Consistent Quality: Factory-made precast ensures uniform quality.

Precise Dimensions: Tight tolerances ensure accurate fits.

INNOVATIVE TECHNOLOGY AND RIGOROUS QUALITY CONTROL

Innovative technology and rigorous quality control are essential components of modern precast concrete product manufacturing. Here are some ways technology and quality control are applied:



INNOVATIVE TECHNOLOGY:

- Automated Manufacturing: Improved efficiency and consistency.
- Robotics: Enhanced precision and reduced labour.
- Advanced Materials: Innovative concrete mix designs and fibber reinforcement.

RIGOROUS QUALITY CONTROL:

Raw Material Inspection: Strict testing of cement, aggregate, and steel.

Mix Design Optimization: Continuous testing and refinement.

Casting and Finishing: Precise control of temperature, humidity, and vibration.

Curing and Storage: Controlled environments for optimal strength development.

Non-Destructive Testing (NDT): Regular inspection for defects or damage.

Certification and Compliance: Adherence to industry standards and regulations.

Continuous Improvement: Regular training, audits, and process refinement.

TAILORED DESIGN AND DRAWING SOLUTIONS

Our quality control department comprises a dedicated team of four seasoned civil and electrical engineers, each possessing extensive technical expertise. They diligently uphold rigorous quality standards throughout the entire manufacturing process of our products. From meticulous procurement of raw materials to the meticulous inspection of finished products, every aspect is carefully scrutinized to ensure uncompromising quality.

At the heart of our unique selling proposition lies our ability to customize the specifications and design of jacking pipes to precisely match our clients' needs. We collaborate closely with our clients, gathering essential details such as drive length, soil test reports, and maximum load requirements for the jack. Using this information and considering the specific site conditions, we meticulously craft and design jacking pipes tailored to their exact specifications.

GRADE OF CONCRETE: M30 TO M70
SLUMP: 0-5 MM.

Objectives of our Q&C Team

Monitor and control the production in all stages and deter the occurrences of errors, so they can be corrected before they become a damaging and costly phenomenon to obtain the highest possible standard of precast product quality as demanded by relevant standards and specifications,so the quality of the precast products has the desired level according to functionality, durability, and aesthetic appearance.

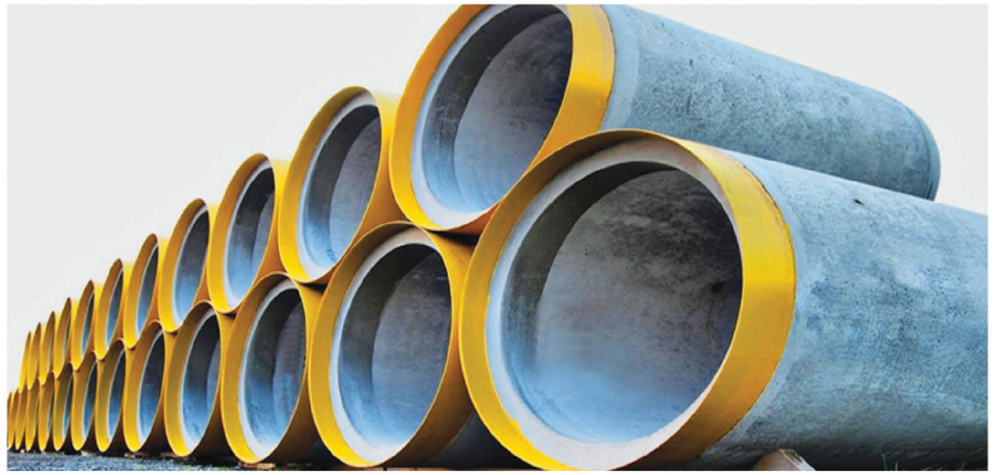
The important purpose of Quality Control is to ensure that all work performed will be in accordance with the specifications and we Bilge Solutions abide with the all-standard quality norms.

Responsibilities of our Q&C team

- Manufactured with M - 30 grade of concrete by vibrated
- Compaction process
- Suitably reinforced to promote long life
- For Jointing, it is recommended to fill the joint between two adjacent drains with cement mortar.
- The drain should be laid on a properly compacted base
- Heavier drains are provided with lifting nuts
- Management commitment to quality and quality control programs.
- We have dedicated Quality control team, to ensure zero tolerance quality check of our product.
- Qualified personnel for all stages of design and production.
- Testing and inspection of various raw materials put to use as per BIS norms.
- Correct size and positioning of reinforcement steel.
- Proper proportioning and adequate mixing and consolidation of concrete.
- Appropriate and controlled curing.
- Checking the dimensions of elements, reinforcement steel, inserts, other incorporated materials, openings, blackouts etc.
- Final inspections of finished precast product prior to shipment (concrete mixes, cube tests and production samples) by In- house quality assurance team .

PROUD PROJECTS PARTICIPATION :

NAME OF THE PROUD PROJECT	NAME OF THE CLIENT
■ 1000 mtr. Long r in New Jalpaiguri.	■ Gail (India) Limited
■ 960 mtr. Long Gas pipe line project, under crossing Raidok river in New Alipurduar.	■ Gail (India) Limited
■ 1200 mtr. long Barauni-Guwahati Gas Pipeline Project, Under crossing Kanamakra (Aie + Manas) river in Assam.	■ Gail (India) Limited
■ 368 mtr. Long Oil pipe line project, under crossing Raidok-II river in New Alipurduar.	■ Oil India Limited
■ 375 mtr. Long Gas pipe line project, under crossing Jaldhaka river in New Coochbehar.	■ Engineers India Limited
■ 425 mtr. Long Gas pipe line project, under crossing Raidok-I river in New Alipurduar.	■ Engineers India Limited
■ 360 mtr. Long Oil pipe line project, under crossing Champabati river in New Assam.	■ Oil India Limited
■ 220 mtr. Long Oil pipe line project, under crossing Gathia river in New Jalpaiguri.	■ Oil India Limited



OUR CLIENTS

SIMPLEX INFRASTRUCTURES

LARSEN & TOUBRO

TRENCHLESS ENGINEERING SERVICES PRIVATE LIMITED

Gypsum
GYPSUM STRUCTURAL INDIA PVT LTD

Ace Energy Infrastructure

TCP

ASHOKA
Ashoka Buildcon Ltd.

KIIT
Designing services for better delivery.

wilo

The Telegraph

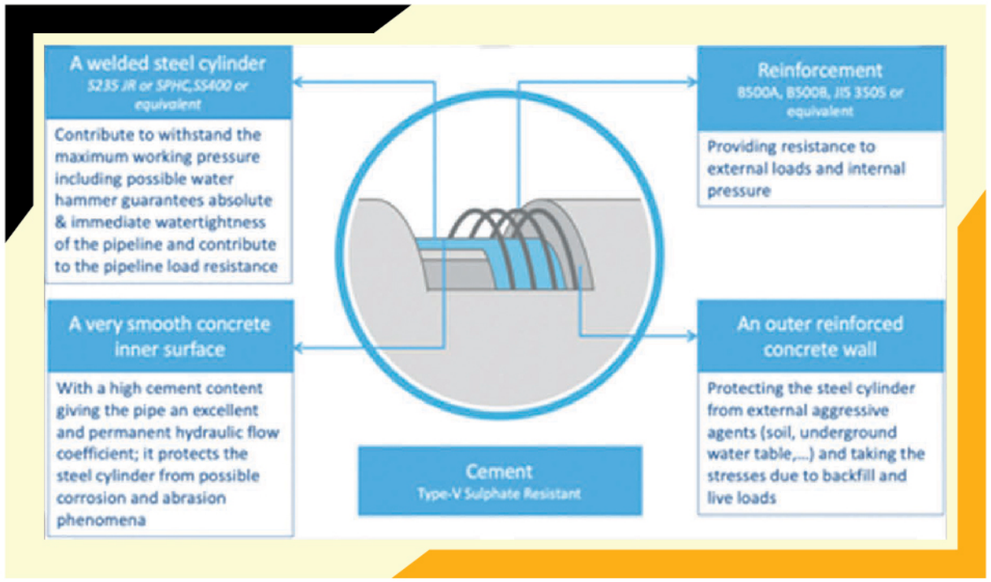
Unit makes tools 'minus rest': Bengal pitches in with resources to join efforts to bring out the trapped 41

Bilge Solutions, an expert in making IJS in the state, had been assigned to prepare two sets of IJS on short notice four days ago

Snehamoy Chakraborty | Calcutta | Published 24.11.25 07:40 AM

https://www.telegraphindia.com/west-bengal/unit-makes-tools-minus-rest-bengal-pitches-in-with-resources-to-join-efforts-to-bring-out-the-trapped-41/cid/1982210

OUR UPCOMING PRODUCTS



Bilge Solutions continually strive to enhance the quality and durability of our products. We are excited to introduce a groundbreaking advancement in our jacking pipes, the integration of a steel casing inside the pipe. This innovation not only reinforces structural integrity but also facilitates seamless connection with another jacking pipe of similar design, ensuring unparalleled strength and longevity. By embedding a steel casing within the jacking pipe, we are setting new standards in reliability and performance.

This design enhancement not only strengthens the pipe but also makes it an ideal choice for projects requiring robust underground infrastructure. We are proud to introduce this technology under the name "Steel core link (SCL)" a symbol of our commitment to innovation and quality in trenchless construction solutions. With SCL our valuable clients can trust that our jacking pipes not only meet but exceed their expectations for durability and performance. We look forward to discussing how SCL can elevate your projects. Please feel free to contact us for further details or to arrange a demonstration.

PRECAST BUILDING

Precast Wall

Foundation with Tie-Beam