

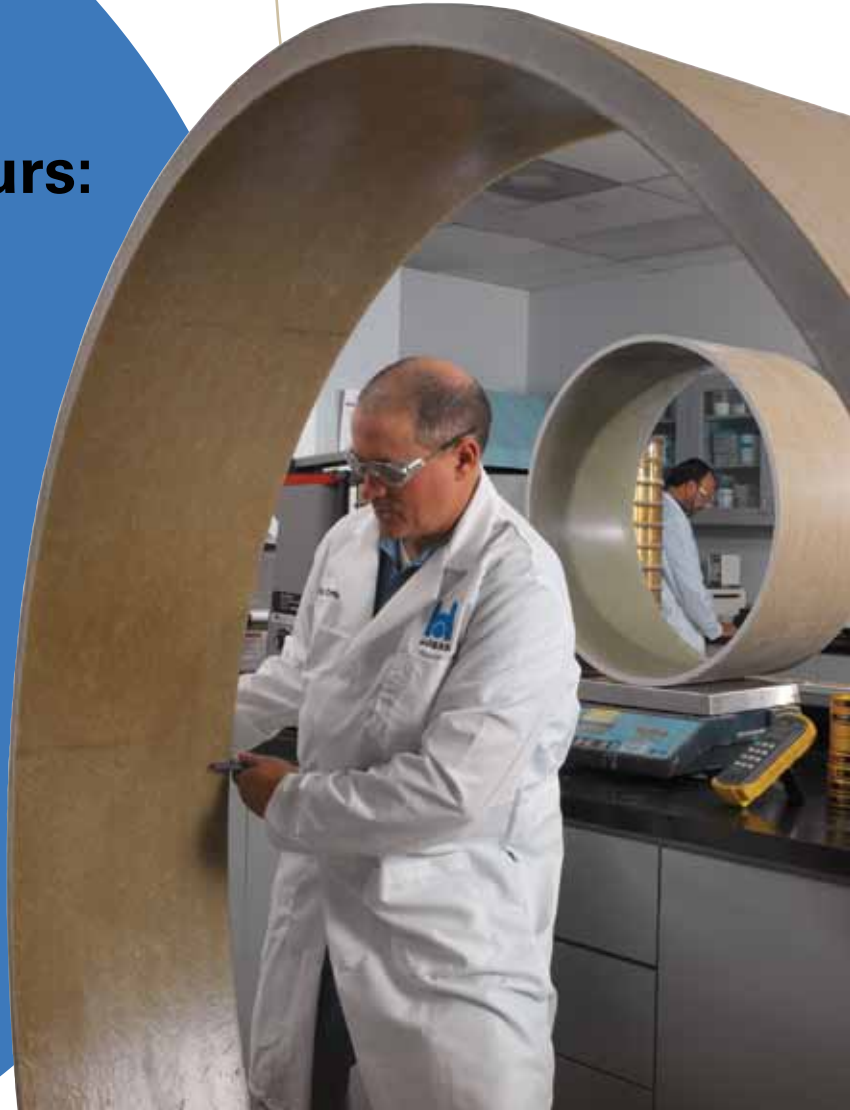
What's in Your Pipeline?





Here's What's in Ours:

- One** Centrifugal casting makes HOBAS unique, delivers major benefits.
- Two** Inherent corrosion resistance produces the longest service, a 100-year design life.
- Three** 25 years of experience with installations in most major US municipalities.
- Four** Engineering support and field service staff to assure your success.
- Five** Quality, the finest materials and sophisticated manufacturing for consistent, reliable pipes every job, every time.



Why Pick HOBAS?

It's the Best Pipe Investment You Can Make
Centrifugal Casting Is the Difference

Exactly What Are HOBAS Pipes?

HOBAS pipes are unique - centrifugally cast, fiberglass reinforced, polymer mortar (CCFRPM). They are strong, light and inherently corrosion resistant with consistent dimensions, smooth surfaces and high stiffness. Sophisticated HOBAS manufacturing means you get real value, the lowest life cycle cost in the industry for both new installations and rehabilitation.

Long-Life

HOBAS pipe is inherently corrosion resistant because of the materials that go into it. Design service life is up to 100 years and more. HOBAS meets or exceeds ASTM standards as measured in sewer pipe accelerated aging tests. Results project that HOBAS pipe will last many thousands of years, unequaled by any other pipe.

Consistent Quality for Performance You Can Count On

Most U.S. municipalities have HOBAS pipe in their systems and the use of HOBAS pipe in the USA is expanding faster than ever after more than 25 years of reliable performance. More than 8,000 miles of HOBAS pipe is in service around the world. The HOBAS computer controlled production process assures consistent, high quality pipes, tested to comply with applicable standards.

Smoother Surfaces, High Flow Capacity

Precision centrifugal casting produces pipes that no other method can deliver - a dense composite with moldsmooth exterior surfaces and a glass-smooth liner that is nonporous, resilient and abrasion resistant. Combined with HOBAS thin-wall construction and resulting oversized I.D., you get the highest flow capacity available.



The HOBAS name on the pipe says you've chosen the leader in pipe technology: first choice for virtually every application and method of installation.



Leak-Free Joints

Another HOBAS advantage is push-together joints for a 100 percent leak-free pipeline that preserves the streets above and reduces treatment costs. HOBAS pipe has a consistent, mold-smooth O.D. The pipes seal perfectly to molded or precise tolerance machined couplings.

Easy Installation

Installation is quick and easy for several reasons. HOBAS high stiffness design provides predictable, reliable pipe performance by every method.

Push-together joints are simple and fast to assemble. Lightweight pipes are safe and easy to handle, often with the smaller equipment typically on the site.



Sliplining: The smooth interior surface and oversized I.D. typically maintain or increase flow capacity. Low profile and flush bell-spigot joint options give you a choice of joint configurations.



Tunneling: Two-pass tunneling requires a smaller primary tunnel because of HOBAS high strength, thin-wall pipe. This reduces excavation and spoil removal. Longer insertion pushes speed installation and require fewer shafts. HOBAS pipe can navigate curves, too.



Easy To Specify, Lower Project Cost

ASTM and AWWA standards cover most applications and product tests. And we offer guide specifications to tailor for your individual project and give you the best pipe for your application.



Engineering and Customer Support

Count on HOBAS for responsive customer service and on-site field reps backed by extensive engineering support. That means continuous cooperation from spec writing stage to installation and final acceptance.



Microtunneling or Jacking: HOBAS pipe's high strength and smooth, constant O.D. permit drives of 500 to 1,000 feet with lower force and fewer jacking stations.



Direct Bury: HOBAS is the preferred pipe for deep installations and withstands covers in excess of 80 feet.



Above Ground: HOBAS pipe is ideal for above ground installations. UV resistance is excellent.



HOBAS Pipe Delivers Major Advantages in Every Demanding Application, Every Type of Installation.



Applications and Installation Methods

This unique, high performance pipe is used for both new installations and rehabilitation. HOBAS pipe is manufactured in diameters from 18 to 110 inches and various section lengths. Other choices include multiple stiffness and pressure classes and a variety of joints and couplings. This flexibility makes HOBAS suitable for virtually every application and type of installation.

The Product

Multiple Applications

- Sewer Interceptors
- Potable Water
- Force Mains
- Outfalls
- Industrial Effluents
- Salt Water Lines
- Odor Control Piping
- Cooling Water

Section Lengths

Standard 5, 10 and 20 feet

Pressure Classes

Standard 25, 50, 100, 150, 200 and 250 psi

Stiffness Classes

Standard 18, 36, 46 and 72 psi plus jacking pipes

Diameters from 18 to 110 inches

| | | | | | |
|-----|-----|------|------|-----|-----|
| 18" | 20" | 24" | 27" | 28" | 30" |
| 33" | 36" | 41" | 42" | 44" | 45" |
| 48" | 51" | 54" | 57" | 60" | 63" |
| 66" | 69" | 72" | 78" | 84" | 85" |
| 90" | 96" | 104" | 110" | | |

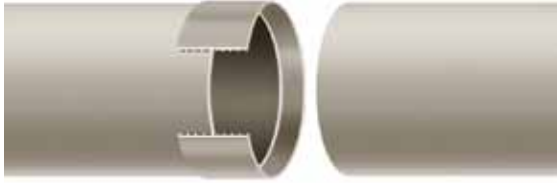
Wall Construction:

I-Beam Principle



Joints

FWC Coupling



Low Profile Bell-Spigot



Flush Bell-Spigot



Joint Type

Applications

| | |
|-------------------------|---|
| FWC Coupling | Direct Bury and Aboveground (up to 250 psi) |
| Low Profile Bell-Spigot | Gravity flow sliplining |
| Pressure Relining | Pressure sliplining |
| Flush Bell-Spigot | Gravity flow direct jacking and sliplining |
| Flush FWC Coupling | Pressure Jacking |

Fittings

- Elbows
- Tees
- Reducers
- Laterals
- Flanges
- Nozzles
- Wyes
- Manholes

Standard Specifications

ASTM D3262 Non-pressure Sanitary Sewers
 ASTM D3754 Sewer Force Mains and Industrial Effluents
 AWWA C950 Pressure Water Systems
 AWWA M45 Fiberglass Pipe Design Manual

Universal Features

Universal Benefits

| | |
|---|--|
| Inherent Corrosion Resistance | <ul style="list-style-type: none"> • Long service life • No add-on linings or coatings • Hydraulics don't change • Lowest Life Cycle cost |
| Oversized Smooth I.D. | <ul style="list-style-type: none"> • Superior hydraulic characteristics • High flow capacity • Significant energy savings in pumped systems |
| Lightweight | <ul style="list-style-type: none"> • Less expensive equipment for handling |
| Long Length Sections | <ul style="list-style-type: none"> • Fewer joints to assemble |
| Resilient Inner Liner | <ul style="list-style-type: none"> • Excellent abrasion and crack resistance |
| Computer Controlled Production | <ul style="list-style-type: none"> • Consistent high quality • Reduced risk with fewer problems |
| High Stiffness, Solid Pipe Wall with High Compressive Load Capacity | <ul style="list-style-type: none"> • Easy to bury using routine methods • Predictable performance • Easily handles deep covers • Long drives routine in sliplining and jacking |
| Gasket-Sealed, Push-Together Joints | <ul style="list-style-type: none"> • Fast, fool-proof assembly • No bonding agents, bolts or welding needed |
| Leak-free Joints | <ul style="list-style-type: none"> • Zero infiltration, lower treatment costs • No ground water pollution |
| Smooth, Dimensionally Consistent O.D. | <ul style="list-style-type: none"> • Field length adjustments easy – pipe may be cut anywhere along length and assembled with gasketed joint • Lowest jacking loads |
| Easy to Cut, Mold, Miter, Cast or Laminate | <ul style="list-style-type: none"> • Accommodates any fitting angle • May be field fabricated, modified or repaired |





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