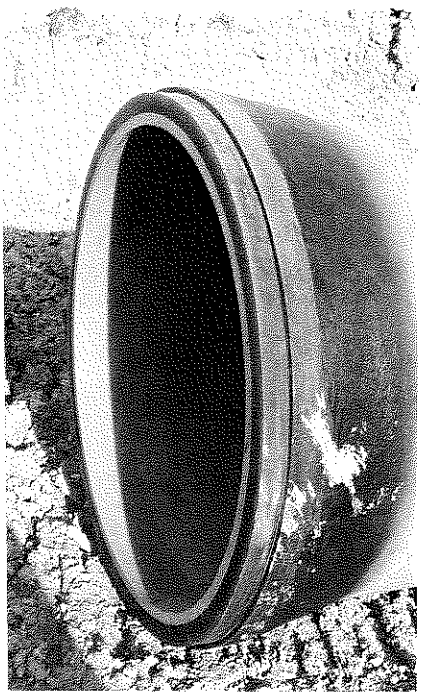
Hobas

Hobas USA, Inc.

Nov. 1987

First Austin Installation Completed With Hobas Pipe

The first Austin area installation of centrifugally cast fiberglass pipe produced by Hobas USA was completed in October by Cash Construction on the Lake Creek Wastewater Interceptor Project. The 960 feet of 42″ diameter line is part of the expanded sewer scheme to support the development of the area by the 183/620 Group.



Special Hobas USA spigot to connect to RCP tee manhole bell.

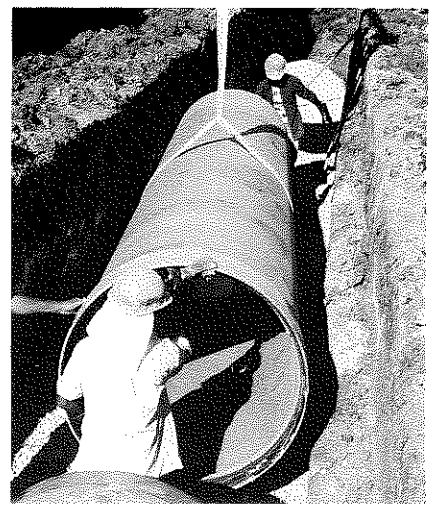
20 ft. long Hobas USA pipe weighing 2500 lbs. being lowered into the trench with a 235 backhoe.

The area is particularly environmentally sensitive since it falls within the Edwards Aquafer Recharge Zone. Texas Water Commission regulations require a maximum leakage rate of 50 gallons per inch of pipe diameter per mile of line per day for pipes installed in the Zone. Primarily for this reason, the project design team of Jerry Meek and Curtis Johnson of Curington and Associates, included Hobas fiberglass pipes joined with FWC couplings in the specifications. The Cash Construction Company field management personnel confirmed the joint's outstanding performance commenting several times during installation that they had never seen a tighter joint in any type of pipe.

The FWC coupling joint proved to be eminently valuable in another way as pipe laying began. A mis-fabricated manhole had the line heading 3 degrees off line in the pre-cut rock trench. By angularly deflecting the Hobas joints, the Cash crew quickly had the pipe back on line without any trench modifications, saving money and time.

The project utilized concrete tee manholes. Hobas USA designed and built special fiberglass spigots (pictured) to seal to the concrete bells using "O" rings. The unique fabrications permitted the entire system to be sealed with push-together, rubber-ring connections, which make joining fool-proof and quick.

The Lake Creek project was a showcase for Capitan Enterprises subsidiary companies. Besides the Hobas pipe, the rock trench was cut by Key Enterprises (sub to Cash) using a 910 Capitol Trencher Corporation ladder ditching machine.



Trench worker lubricating coupling gasket prior to assembly.

Product Profile:

INHERENT CORROSION RESISTANCE - Major Benefit of Hobas USA Pipe

Description:

Hobas pipes are manufactured from thermosetting polyester resins, glass fiber reinforcements and silica sand. These raw materials are precisely combined in the centrifugal casting manufacturing process to create a dense, void-free pipe wall composite structure that possesses superior inherent corrosion resistance.

Performance:

Chemical resistance requirements for fiberglass pipes used in sanitary sewer service are given in ASTM product standard D3262. Per this specification, pipes are exposed to 5% sulfuric acid for over 10,000 hours while vertically deflected to very high levels. Test results are analyzed per ASTM D2992 to demonstrate the 50 year capability of the pipe in this environment.

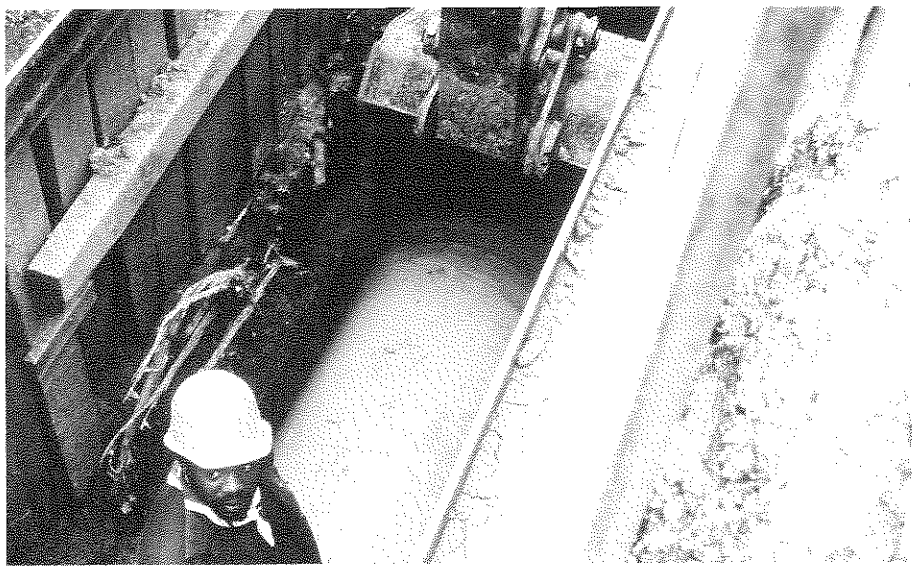
Recently, Hobas USA pipes manufactured at our Houston, Texas facility passed the D3262 control test requirements for "highly resistant" pipes verifying the superior corrosion resistance of our product.

Benefits:

- Long, maintenance-free service life.
- No costly add-on linings or coatings to damage, repair or maintain.
- No need for expensive cathodic protection or polybags to install and monitor.
- Ideal pipe for economical relining of corroded pipelines.
- Hydraulic characteristics are unchanged with time.

Conclusion:

To reap the many cost saving benefits of superior corrosion resistance, specify centrifugally cast fiberglass pipes from Hobas USA.



Backhoe bucket pushes Hobas USA pipe into deteriorated RCP sewer.

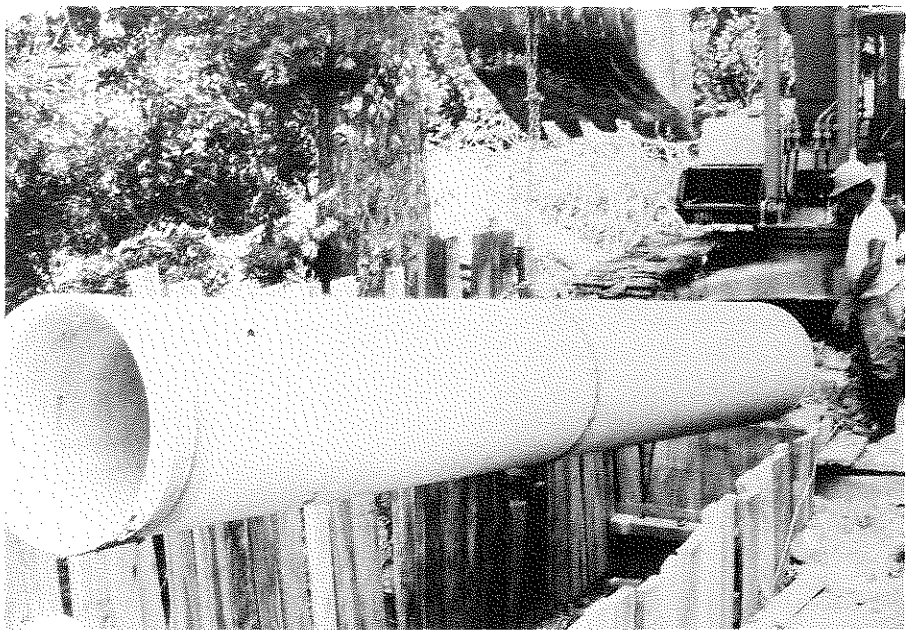
Hobas USA Pipes Chosen For Major Houston Sewer Rehab Program

Hobas USA centrifugally cast fiberglass pipes were utilized this summer to reline deteriorated concrete pipes in a north Houston area. This project, wastewater job no. 3783-16, is part of the $42 million Northside Rehab program to rehabilitate many miles of crumbling Houston sanitary sewers and is one of 31 separate contracts to accomplish this work. While most of the pipe is small diameter, some of the lines needing refurbishing are up to 42″, large enough to permit sliplining with Hobas pipes.

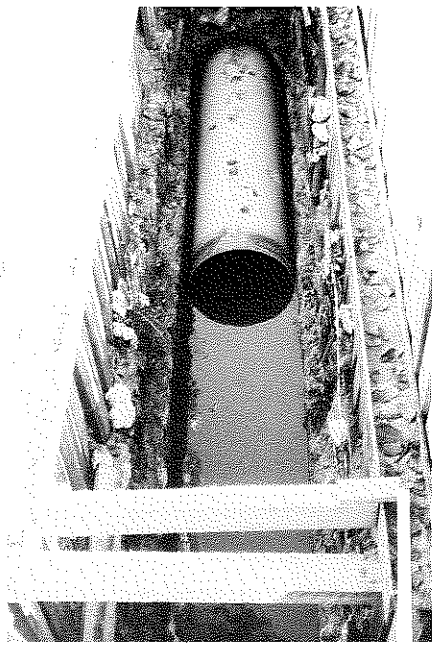
This project consisted of 930 ft. of 30″ Hobas pipe to reline 36″ RCP and 600 ft. of 36″ Hobas pipe to reline 42″ RCP. The Hobas pipes were provided in 20 ft. sections with a special sliplining, low-profile, gasket sealed bell-spigot joint. The tight seal and ease of assembly pleased City of Houston Project Engineer George Klein. He commented, "This job went very well. The Hobas pipes installed easily and very quickly."

The installing contractor, Hycon Construction Systems of Houston, experienced significant installation savings using the Hobas pipes when compared to the large diameter HDPE alternative. Hycon Project Manager Warren Moody, highlighted the cost saving advantages achieved with Hobas pipe as follows:

- The sewer was relined while in operation avoiding the time, trouble and expense of a temporary by-pass system that would have been necessary with other relining systems in these diameters.
- The access/entry pits needed to insert the Hobas pipes were much shorter (and therefore much cheaper) than would have been required to install fusion joined polyethylene pipe.
- The gasket sealed Hobas bell-spigot joints eliminated the time



30" Hobas USA pipe being lowered into the relining access pit.



Hobas USA pipe relining sewer while still in operation.

and expense of fusion welding required to join polyethylene pipes. The Hobas pipes assembled so fast and installed so easily that Hycon inserted 400 ft. in just 3 hours.

- The class SN 36 (minimum pipe stiffness of 36 psi) Hobas pipes possessed enough inherent rigidity (stiffness) that the required annulus grouting was accomplished without internal bracing or worry of pipe collapse.
- The strength and ruggedness of the Hobas pipes allow pushes of over 1000 ft. to be accomplished; thus, minimizing the number of costly access/entry pits needed.

Both Hycon and the City of Houston personnel are pleased with the performance of the Hobas pipe and Houston residents in the job area are reassured. Inevitable sewer collapse due to corrosion has been avoided by sliplining with Hobas USA centrifugally cast fiberglass pipes.

Hycon has purchased over 1000 ft. of 48" and 54" Hobas USA pipes for another sliplining project to be completed this fall in Baton Rouge.

Houston Project Selects Hobas Pipe In A Fabric Installation

Centrifugally cast fiberglass pipes produced by Hobas USA are being installed in a fabric stabilized installation on the West Orem Sanitary Sewer Project in south Houston.

The mile long, new 42" line is being constructed to satisfy a court mandate to divert some flows from an overloaded Houston sewage treatment plant. The pipe runs west from South Post Oak and passes through silty sands that are below the normal ground water table. This condition tends to make these soils unstable except when adequate dewatering is maintained. In circumstances like this, Special Section No. 5 (permanent sheeting with floor) is the normally employed construction method in Houston.

The installation contractor on this project, Crawford-Gray, has essentially substituted a Marifi stabilization fabric for the support of the permanent sheeting and a cement stabilized shell foundation for the flooring. Trench workers are protected during pipe laying by a portable trench box that is "dragged" along the line for the installation of each 10 ft. pipe section. The stabilization fabric completely surrounds the class SN 46 (minimum pipe stiffness of 46 psi) Hobas pipe and pipe zone backfill, helping to distribute loads transferred to the native soil and preventing migration of the crushed shell backfill into the native silty sand.

Initial sewage flows in the line are expected to be only about one million gallons per day. Due

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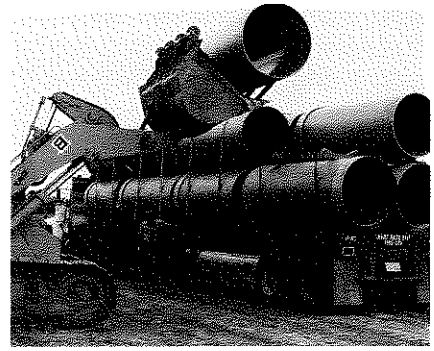
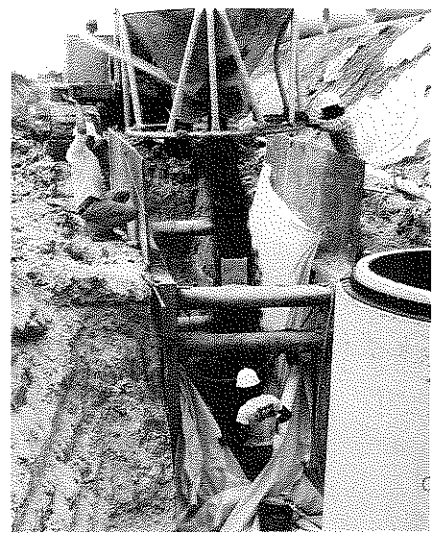


Job site unloading of 10 ft. sections of 42" Hobas USA pipe.



42" Hobas USA pipe installation in trench box construction.

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to the relatively flat slope and low flows, the City of Houston expects sulfides to be generated and therefore specified only corrosion-resistant or corrosion protected piping material.

Project Engineer Doug Bernard, particularly likes Hobas pipe because of its inherent corrosion resistance throughout its entire wall versus dependence on a separate lining or coating to protect an otherwise easily attacked material. The City and Crawford-Gray personnel have also been pleased with the tightness of the easily assembled, push-on, gasket-sealed coupling joint. Air testing to date has shown no leaks.

A 200 ft. portion of the line will be direct bored by jacking the Hobas fiberglass pipe to pass under 3 natural gas lines that cross above this pipeline. Construction of the total project is expected to be completed this Fall.

Hobas USA Hosts Worldwide Licensee Meeting

Representatives from Hobas fiberglass pipe companies throughout the world gathered in Houston during the week of September 21 to exchange ideas and share experiences. The annual licensee meeting, sponsored by the parent company, Hobas Engineering and Durotec of Basel, Switzerland, was attended by personnel from England, Austria, Italy, Sweden, Switzerland, Japan and Australia, as well as the USA.

The agenda included reports from each licensee company on unique applications, new successes and results of product testing. Working sessions discussed new or modified products, standardization, equipment changes and process operation.

Next year's meeting location was tentatively set for Sydney, Australia.

Russ Currie of Johnston Pipes of England explains successful Hobas application in Great Britain.

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