Make things happen. HOBAS®

HOBAS CC-GRP Pipe Systems
Environmental Care throughout the Product Life Cycle

For more than 50 years the name HOBAS has been synonymous with centrifugally cast CC-GRP Pipe Systems. The centrifugal casting process generates a product with unique features, answering clients' requests around the world for innovative solutions for water and wastewater pipelines.

Environmental protection is embedded in the production process, pipe transportation, installation and use phases as well as in everyday life of HOBAS Employees.

HOBAS makes sure that not a drop of valuable potable water is lost and not a square meter of soil is contaminated with sewage water.

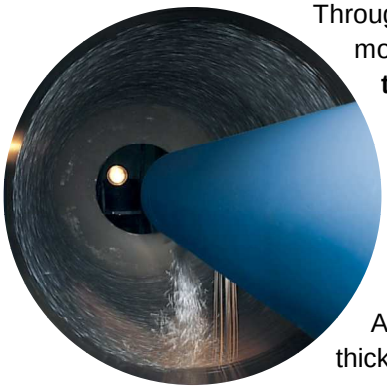
Pipe Design and Selection of Raw Materials

HOBAS Pipes are designed for a multitude of applications and installation methods. **The pipe system design is based on client specifications integrated with environmental protection and a sofisticated, certified quality system**. For instance, four different types of long term tests are undergone to assess performance for an operational service life of more than 50 years.

Raw materials are carefully chosen and undertake stringent quality control. HOBAS Pipes' main ingredients are Glass Fiber, Polyester Resin, Sand, Calcium Carbonate (Marble) and Additives. Sand and Calcium Carbonate are environmentally neutral.

In addition, **preference is given to recycled materials in the choice of raw materials**. For instance it is a target to approve and use Polyester Resin obtained from recycled PET.

Production Process



Through the centrifugal casting process, the raw materials are fed into a rotating mold. Special attention is given to **minimizing resource consumption and to reducing waste**. For example, the electronic programming instructs the feeder arm exactly how much material should be released at different production stages. In addition, **much of the energy used in the production process is recuperated and reused**. Process improvement aims to enhance production according to desired specifications and in line with environmental care.

A pipe comes out of the machine with perfect roundness, constant wall thickness and a completely smooth outer and inner surface.

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Pipe Transport and Installation

HOBAS Pipes have a standard length of 6 meters and a reduced outer diameter in relation to the bigger inner diameter as compared to other materials such as concrete or iron. In addition, HOBAS Pipes are lighter and, as a result, smaller pipes can be nested inside bigger ones during transport thus resulting in **reduced transportation costs and less CO_2 generation.**

With their ideal inner/outer diameter ratio, HOBAS Pipes can be installed on low trench widths, using less bedding material and less backfilling, thus resulting in less soil movement. Furthermore, less storage space, less use of heavy machinery and easier handling enable faster construction while reducing costs.

The smooth outer diameter of HOBAS Pipe Systems allows trenchless installation methods such as Jacking. The power consumption during the jacking process is reduced due to the smooth surface and the lower pipe weight since less jacking forces are needed as compared to other materials.

These advantages result in not only reduced installation costs but also in a cleaner and more environmentally friendly installation site.

Furthermore, HOBAS CC-GRP Pipe Systems show excellent resistance to UV light and are therefore widley chosen for above ground installations.

Operation Phase

The operational service life of more than 50 years and the absence of corrosion and abrasion reduce **maintenance costs** with HOBAS CC-GRP Pipes Systems **to a minimum**. The smooth inner surface and greater internal diameter as compared to other materials provide HOBAS Pipes with a significantly lower roughness coefficient and superior flow characteristics. As a result, less energy is needed to pump the water through the pipe system throughrought its life time. **This is not only a cost reduction advantage but also minimizes resources consumption and lowers CO_2 generation for decades of product use.**

In case of **Relining**, when new pipes are inserted into an old corroded pipeline, similar or even superior flow characteristics can be obtained even though the HOBAS Pipe diameter is smaller than that of the older pipe.

An installed HOBAS CC-GRP Pipe System is **well integrated and has a neutral impact on the surrounding environment** while preserving its functional quality.

Recycling

Finding ways to efficiently reuse pipe waste-material represents a key concern for HOBAS. Today recycling thermosetting plastics mainly consists of energetic recycling. At HOBAS, GRP waste is shredded and – as one way to reuse it - transported to cement plants where it is energetically recycled in a furnace, thus **replacing fossil fuels** (coal).

As use of fiber reinforced plastics e.g. in automotive, aviation, windmill and pipe industry results in continuously growing composite waste, the GRP industry as a whole is driven to find cost-effective and sustainable alternatives of recycling. HOBAS is naturally part of this commitment.

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