



Make things happen. **HOBAS®**

## Focusing on Environmental Protection

Closing the last gap between Völkermarkt and Klagenfurt (Carinthia) in November 1999 marked completion of the main express highway south from Vienna to Italy. This phase also involved installing a new drainage system using the HOBAS CC-GRP Pipe System for the Gurk Bridge area, ensuring long-term protection of the sensitive environment. Austria's road building standards are among the highest in Europe, which are reflected in the stringent specifications for the construction of highways and bridges. These requirements include making the routes as straight as possible, enabling high speed and smooth traffic flow, but demand a great deal of planning and implementation. Frequently they also call for complex operations to overcome the numerous natural obstacles.



### Rigorous environmental regulations

Highways may only be built through conservation areas if rigorous environmental regulations are observed. In addition, in water protection zones, external influences, such as storm water, have to be prevented from having a detrimental effect on groundwater. The new highway south also runs through the middle of a water protection zone in the section from Dolina to Klagenfurt, which required particular care in the area of two bridges 215 and 74 meters in length.



### Drainage for two bridges

The system was designed to catch the entire surface water in the area of the Gurk Bridge, up to 31.5 liters per second, from drains located at a low gradient every 12.5 meters, and discharge it into a storm water sewer. As a result, the polluted water from the road surface is collected before it can reach the surrounding ground. Following discussion with HOBAS experts, the contractor, Österreichische Strassenbaugesellschaft AG (OESAG), decided on HOBAS DN 800 pipe of six meter length for the bridge drainage system. Absolute watertightness, high resistance and low maintenance tilted the balance in favor of the HOBAS CC-GRP Pipe System from the HOBAS Wietersdorf Plant in Austria.

### Ideal for bridges

HOBAS Product benefits speak for themselves: The high corrosion resistance of the HOBAS CC-GRP Pipe Systems guarantees long maintenance intervals, reducing the high costs to a minimum for maintenance work in areas difficult to access. Great care has to be taken when building in environmentally sensitive zones, which is why absolute leak tightness was top priority for the HOBAS CC-GRP Pipe System. Furthermore, an additional specification in bridge construction requires the pipes to absorb the linear extension occurring in the area of the bridge abutments. HOBAS dilation couplings made of stainless steel guarantee the required integrity of the pipeline in the event of such elongation here.

### Installation from above

Pipe installation began in March 1999. Their low weight and easy handling meant that a simple crane was all that was required. The pipes were lowered through the gap between the two carriageways and suspended from steel girders with supports located every 3 meters. Wooden saddles with a layer of rubber ensure they do not sustain damage. A walkway facilitates maintenance work on both sides of the 215 meter long bridge. It was not least thanks to the length and easy installation of the HOBAS CC-GRP Pipe Systems that the Gurk Bridge drainage system was completed in only four weeks.

### Eco-friendly appearance

Decisive for bridge planning was also an eco-friendly appearance. Here the color of the pipes was also an advantage blending in with the concrete of the bridge and detracting as little as possible from the surrounding countryside. If motorists on the new highway do not notice the drainage system, then the HOBAS CC-GRP Pipe System will have succeeded in achieving their goal.

Thanks to the worldwide unique machining of the pipe segments with the waterjet cutter at the HOBAS Factory in Wietersdorf, Austria, it was possible to produce this custom made tank within three weeks only. Computer assisted steering enabled fast and precise cutting and drilling. Laminating the individual components reduced the production time as well.

Ready to welcome tourists to their quaint little village, the municipality Pürgg is more than happy with the high quality products and professional project management by HOBAS.

Overview	
Year of Construction	1999
Duration	4 weeks
Pressure Class	PN 1
Diameter	DN 800
Stiffness Class	SN 10000
Installation Method	by crane from the ground
Application	BridgeLine®
Client	Österreichische Strassenbaugesellschaft AG
Contractor	Steiner Bau
Advantages	Eco-friendly, Highly resistant, Absolutely water-tight in environmentally sensitive area, Low weight: small cranes for pipe laying, quick laying, thus saving costs, Excellent resistance to UV light, Low-maintenance GRP pipe, Fast installation, Stainless steel dilation couplings, Easy cutting of pipes on site if necessary, Sand exterior of pipe favored due to proximity of the color to the environment