

## Reference

# Reference – Drinking Water

**PVC-U products of GF Piping Systems replacing 30 year old carbon steel piping on drinking water plant in Croatia.**



The city of Virovitica in Croatia is located near to the Hungarian border. Its water works company Virkom serves approximately 20.000 people daily with drinking water. In order to assure required European potable water standards, Virkom decided in 2008 to replace the existing old sand filtration units (total flow rate approx. 320 m<sup>3</sup>/h) by new ones.

## Project Background

After 30 years of operation the old sand filtration units with carbon steel piping faced severe corrosion and incrustation problems. In order to secure the drinking water supply Virkom had to react. First it was planned to install stainless steel pipes and valves for the new filters. Croatian long term GF Piping Systems partner PTMG convinced both end customer and engineering company of the significant advantages of plastics versus a metal piping solution. PTMG suggested to split up the project in two phases in order to prove the liability of PVC-U products. In a first step three of the sand filters have been executed in 2008. Due to the high quality and simply to install GF solution Virkom decided in 2010 to do the remaining six filters with PVC-U products from GF as well. Having made good experiences with GF Piping Systems Virkom decided in 2012 to execute a third extension phase of the plant with additional five sand filtration units in PVC-U as well.

## Chosen technical solution

State-of-the-art sand filters require robust and long lasting piping solutions. Due to different operation modes for filtration and back flushing numerous automated valves are generally required to operate these type of water treatment units securely. PVC-U pipes and fittings from GF Piping Systems showed considerably lower pressure drop and less tendency for incrustation than common metal pipes. Additionally GF automated butterfly and ball valves with a guaranteed minimum open-close cycle performance of at least 50.000 actuations show better long-lasting performance than comparable metal valves.

## System and product selection:

- PVC-U pipes and fittings d20 - d255 approx. 300 m
- PVC-U ball valves manually (type 546 – 56 pieces and electrically (type 130 – 14 pieces) operated
- PVC-U butterfly valves manually (type 567 – 28 pieces) and electrically (type 140 – 70 pieces) operated



Sandfilter drinking water plant, Virovitica, Croatia

## Main benefits for the customer

- Easy and time saving detail design based on availability of CAD files for all PVC-U products
- Simple installation procedure compared to stainless steel piping systems
- Better pressure loss performance and lower tendency for incrustation compared to metal pipes
- Significant lower capital invest than stainless steel whilst all required certificates for drinking water in the European Union are available
- On site training support by PTMG for installing staff combined with good availability of GF products in Croatia due to close cooperation between GF Piping Systems and PTMG