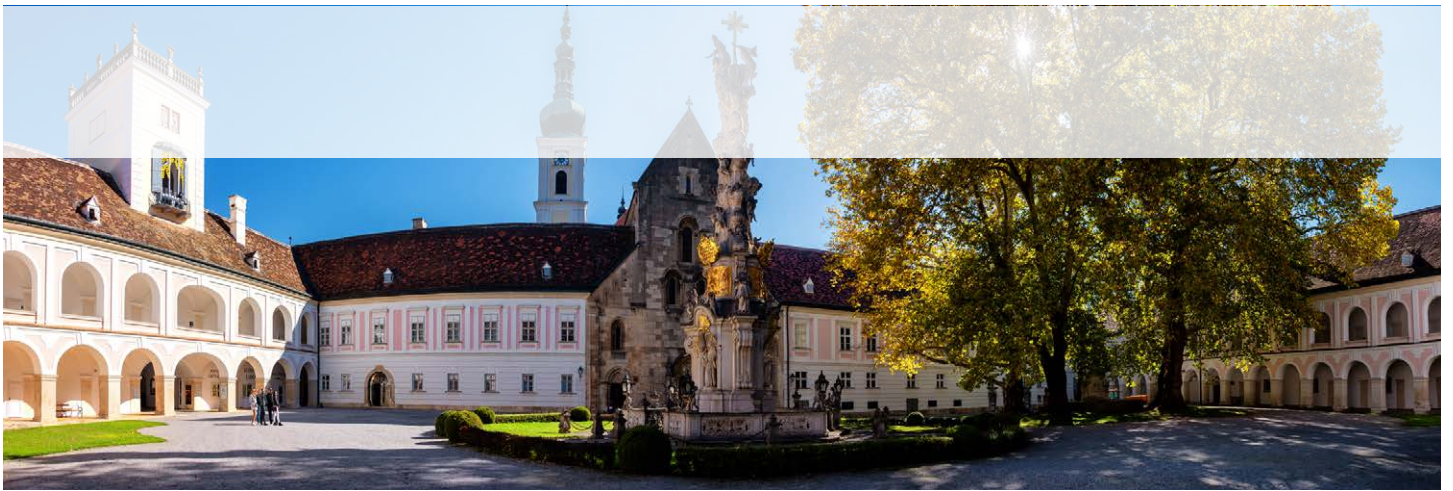




Polybutene
Piping Systems Association

Case Study

Abbey Heiligenkreuz, AT



Thermaflex | Flexalen



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Heiligenkreuz, AT

Thermaflex | Flexalen



The Stift Heiligenkreuz monastery was founded in 1133 by St. Leopold III of the House of Babenberg and has quite a history. The same applies to its long running district heating network, which was refitted with a Flexalen polybutene-1 system by PBPSA member Thermaflex for the surrounding community, using biomass energy from the local sawmill, based on woodchips. This was one of the first projects where a Flexalen PB-1 piping system could prove its applicability and value for this kind of heating solution.



One of the first Flexalen projects in Austria

The Stift Heiligenkreuz Abbey is a beautiful operating Cistercian monastery. It is located in the middle of the “Wienerwald” (the Vienna woods) and serves as the oldest active and inhabited Cistercian monastery in the world.

Heiligenkreuz, AT

The first construction phase for the district heating network was in 1983 and involved the installation of the main line from the sawmill to the Abbey Heiligenkreuz. The connections were done using butt-welding by trained welders. The Forestry Commission organized the drainage.

In 1984 the connection of the community buildings (including the town hall, fire department, kindergarten, etc.) was completed. One year later, single family houses could be connected to the district heating network as well, securing reliable and affordable heat for all connected users.

Goals

The objective was to replace the oil boiler in the diocese, and use bark and sawmill biowaste in a biomass installation for the local heat supply. The use of clean, sustainable energy for the heat supply for the Heiligenkreuz village was the focus, but there was also a desire to achieve an improvement in the air quality.

Main Challenges

- Installation of main line, 3m deep and near the stream bed
- High groundwater table
- Highway crossing
- Connection of single-family houses with minimal damage to the gardens
- Overall planning and selection of pumps, home stations, etc.



Results

75 clients including residences, a school, and a kindergarten were connected from the network. Due to the flexibility and easy weldability of the PB-1 material, this could be realized with minimal disturbance to the existing environment and its users. The network's total length is 3.6 km with a heat loss of less than 1°C of the main temperature.

The boiler power is 3 Mw + 0.8 Mw biomass, and the nominal power is 2.2 Mw for heating and 2 Mw for wood drying. For the heat supply, up to 10.000 m³ of bark and sawing waste is used. So far, there have been no network maintenance costs, despite the high ground water table. That's because Flexalen made from Polybutene-1 is sustainably resistant to water and mechanical damage, and is also corrosion-free.

Organisations

- Forstverwaltung Heiligenkreuz (forest management)
- Stift Heiligenkreuz (Abbey Heiligenkreuz)