

Project: Almásfüzitő, Hungary (gas engine with 3 MW_e, 3 MW_{th} installed capacity)

Used material: PSC 250HP (Power Smart Coat)

Place of use: Hot water Pipeline system

Introduction:

Energiabörze as an electricity trader holds an aggregator (virtual power plant) in order to utilize the capabilities of the generation assets for providing ancillary services to the Hungarian TSO, MAVIR. In order to maximize the efficiency of own assets by reducing losses, Energiabörze used the PSC material for insulation purposes.

Installation of PSC:

We have installed some thermal and pressure measuring instruments into the heating pipeline system before and after the heat exchangers at our CHP unit Almásfüzitő. 135 m³ 80°C-85°C hot water circling in the heating-pipeline system per hour. When we built the heat and pressure measures into the system, we had to remove the rockwool insulation and the tin coating.

One of the most important things is to minimize the heat loss until the selling point. To reach this goal, we had to insulate the holes on the pipeline system.

The rockwool insulation and the tin coating are very complicated to use on a surface with many outstanding pipes, or measuring points. That's why we have used PSC. Painted it by a paintbrush 3 layers. and about 2-3mm thick.

Some picture of the place of use:



After the painting was dry, we checked the temperature of the surfaces, seen on pictures below:



Temperature was measured with a certified touch thermometer. During the measurement the hot water in the pipeline system was: 80°C.

Temperature of the surface of the pipeline system, without PSC insulation: 61,2 °C

Temperature of the surface of the pipeline system, with PSC insulation: 32,2 °C

Results and consequences:

As it is shown above, the temperature of the surface we used PSC reduced almost 30 °C. It is considered as a great result. Our experiences with the PSC were: easy to apply, it dries fast on hot surface, usable at any surface, heat insulation factor is high, water resistant, easy to correct if damaged.

Recommendation:

Energiabörze recommend to use PSC material for any low temperature surface insulation. It would be very useful if it could be applied higher temperature intervals.