

# CORSYS

## IN SAINT PETERSBURG

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Avangard Engineering is an official representative for POLY-PLASTIC Group in Saint Petersburg and the Leningrad region, supplying northwest Russia with high-tech CORSYS, PROTECT, and MULTIPIPE polyethylene pipes. The company has gained a reputation as a reliable supplier within just two years of successful operation and has been chosen to supply pipes for the country's most important projects. The advantages of modern polymeric pipes can be seen in many large-scale projects.

### Petrolesport

Petrolesport is a modern, high-tech port complex with container, ferry and refrigerator terminals. The complex provides discharge, storage, freight-forwarding, customs clearance, temporary storage areas and other services.

Customer – Petrolesport OJSC  
Contractor – Petroecologiya LLC

During the renovation of the utility networks and the construction of the storage yard, the company had a bad experience with SN8 pipes at a depth of 3 metres as some sections of the pipeline were showing unacceptable levels of ovalisation. Avangard Engineering specialists, in co-operation with the LENMORNIIPROEKT Design Institute, conducted pipeline strength calculations in accordance with ATV DVWK-A 127 (Static calculation of drains and sewers). The results showed that pipes with tougher ring stiffness were required i.e. SN16 with special welded sockets made by injection moulding. Over 2 kilometres of



CORSYS PRO SN16 pipes with diameters from 200 mm to 630 mm were supplied to the project. Currently negotiations are being held regarding further pipe supplies to Petrole-sport OJSC.

### Western High-speed Diameter

Western High-speed Diameter is an orbital motorway with toll in Saint Petersburg.

The design of a water pipeline at one of the motorway sections proposed the use of 1,200 mm fiberglass pipes. Specialists from Avangard Engineering have conducted a comparative analysis of fiberglass and CORSYS ARM SN16 pipes, supported by all the relevant static and hydraulic cal-



culations. As a result, 70 metres of CORSYS ARM pipes were supplied to this project.

The customer required supervision of the works and welding quality control. Specialists from POLYPLASTIC Group and Avangard Engineering provided all the necessary support.

### Snow-melting facilities

The construction and operation of stationary snow melting facilities (SSF) is a new area of business for Vodokanal of Saint Petersburg. Due to the depth of the pipeline (about

5 metres), specialists from the Lengiproinzhpoeekt Design Institute conducted static calculations in accordance with ATV 127. The results showed that pipes with a SN16 ring stiffness were required. PROTECT pipes were chosen for trenchless installation.

Over a kilometre of 1,000 mm CORSYS PRO pipes, and two kilometres of 250–630 mm CORSYS PRO pipes, and 110–560 mm PROTECT pipes were supplied for the SSF project.

There are currently seven stationary snow melting facilities operating in Saint Petersburg and this number will rise to fifteen by November 2013.



### Lakhta Centre

The Lakhta Centre is Gazprom's new cultural and business centre in Saint Petersburg's north costal area.

The purpose of the project was to create a new business area in the outskirts of the city to free historical Saint Petersburg from congestion. The construction of a high quality utility infrastructure for the project was an important and highly demanding task to undertake.

Avangard Engineering played active role in the decisions relating to sewer and water pipeline design.

The German ATV DVWK-A 127 method (static calculation of drains and sewers) was used during the design of the utility infrastructure. This method was new at the time and



it was translated and adapted by specialists from the POLY-PLASTIC Group. New methods were required due to the depth of the pipeline and water bearing grounds. 1,500 kilometres of CORSYS PRO SN16 1,000 mm diameter pipes with welded sockets of high ring stiffness were provided.

## Pulkovo Airport

The business operations at Pulkovo Airport have been managed by the Northern Capital Gateway International Consortium since April 2010. The key priorities of the Consortium are the construction of the new international passenger terminal, modernisation of the Pulkovo-1 passenger terminal, reconstruction and construction of the technical facilities and the development of commercial infrastructure. The project will ensure a high level of services in compliance with IATA level C and will make Pulkovo the largest airport in the Baltic Region.

The participation of Avangard Engineering in projects of this scale is proof they are trusted and have earned a good supplier reputation. Due to the tight schedule, all the relevant resources and technical knowledge were mobilised to ensure the contractor received all the pipes within schedule.

The designed specified the following pipes from POLY-PLASTIC Group: MULTIPIPE 2 (designed for critical use), PROTECT pipes (designed for trenchless technologies) and CORSYS pipes.



The vision for the airport includes infrastructure development and expansion of Pulkovo until 2040.

## Renovation of Kolpino water disposal system

The Zheldorproektpromstroy Design Institute has designed the sewer collector from the No.7 sewage pumping station to the sewage disposal plant.

Avangard Engineering, in partnership with Vodokanal of Saint Petersburg, Vodootvedenie, Zheldorproektpromstroy and the contractor SMU-53, completed the selection of ma-

terials, taking into consideration the challenging geological conditions of the site and the position of the sewer pipelines under the roads. The decision was taken to use 1,200mm SN16 CORSYS PRO pipes instead of HDPE PE 80 SDR 21 (SN8.3) pipes.

The structural properties of CORSYS PRO pipes were confirmed by ATV DVWK-A 127 (static calculation of drains and sewers). As CORSYS PRO pipes are connected with a pipe joint and sealing ring, the works were completed within a short timeframe. 1,600 metres of pipes were supplied to the project and for the first time in Saint Petersburg, 1,600 mm diameter SN8 CORSYS PLUS pipes were supplied with permanent joint weld.

Avangard Engineering produced a technical schedule describing the process including excavation works, base design, installation methods for CORSYS PRO and CORSYS PLUS pipes, pipe connection, maximum angular deviation and pipe to manhole connection. The schedule was approved by the Vodokanal and Design Institute.

The customer for this project was Upravlenie Zakazchika National Public Establishment of Energy and SMU-53 CJSC was the contractor. Both parties praised the pipe products used.

## Ė-Auto plant

The Upravlenie Zakazchika National Public Establishment of Energy and Engineering Committee, with financial support from VTB Bank, have conducted engineering works at the Maryino Industrial site. Ė-Auto plant is one of the enterprises based in the area. 800 metres of CORSYS ARM SN16, D=120 mm pipes were supplied from winter 2011 to 2012.

These are just some of Avangard Engineering's supply projects. In each case, the unique technical characteristics, reliability and durability of POLYPLASTIC pipes were presented by a team of professionals, who proved the advantages and provided engineering support in the early stages of each project.

