



# ISOPROFLEX-ARCTIC PIPES INCREASE RELIABILITY OF GOLD MINING IN CHUKOTKA

**Products of POLYMERTEPLO Group have proved their reliability and effectiveness in different climate conditions. The performance of ISOPROFLEX pipe in cold climate was most exemplary. ISOPROFLEX-A pipes, particularly, have been used with heating systems of Anadyr, Chukotka Autonomic District for many years. No-frost ISOPROFLEX Arctic pipelines equipped with electrical heating have been used in gold mining facilities. Maxim Maximenko, heating and water supply supervisor:**

**K**aralveem Mine OJSC started development of one of the gold mining sites at Karalveem gold deposit in Bilibino region of Chukotsky Autonomous Region in the beginning of 2000. During construction of gold concentrating mill considerable attention was paid to engineering infrastructure and water supply systems, in particular. It could be said, that it was the main task.

There were two sources of water at the time of construction. First source – the dam, situated 1,5 km away from the mill, which already had several uncompleted steel pipelines (D=100 mm). Second source was a water well situated 2 km away from the mill with no pipelines installed. Due to the fact that the dam was in emergency condition, the decision has been taken to install a pipeline from the water well using dam's pipes. The pipes, as it turned out, were in poor condition despite short operational time. After two years of operation the pipes had leaks, after three years of operation they

had over 60 holes. Pipes design did not provide heat insulation which led to high energy costs. The whole pipeline had to be replaced.

The choice of certain pipe is of strategical significance for our company. Emergency situation of any scale can lead to shutdown of gold processing indefinitely. This would mean standby, raw materials supply disruption and shutdown of the processing facility. As a result, pipeline damage can lead to colossal financial losses.

Our engineering and technical team has made a list of requirements to water pipelines, based on the previous experience of construction and operation of the pipelines in severe conditions:

1. The pipeline must maintain its integrity if the water in the pipeline freeze (in case of emergency).
2. The pipe must be corrosion resistant – the water from the water well is highly corrosive.

3. The pipeline must have integrated heating system due to very low temperatures and the distance between the well and the plant (over 2 km).

4. Pipeline insulation must insure minimal heat loss without constant heating.

5. Pipeline installation (laying, connection of the pipes, heating system installation) should be of highly reliable and not require high labour costs.

6. Internal diameter of the pipe shall not be less than 80 mm and must not reduce in time.

7. Operational pressure – not less than 1.6 MPa.

8. Operational life should be not less than 10 years.

After market analysis the decision has been taken to use PE pipes. We have chosen polyurethane foam insulated PE pipes with electric heating. The product like this is supplied by several Russian and foreign companies. After the analysis

of commercial offers we chose POLYMERTEPLO, the leader of the industry. The commercial offer met all our requirements: technology proved by years, high quality of product, customer focus and ability to understand our needs, beneficial contractual terms, short lead time (the main criteria). POLYMERTEPLO Group has a great experience in supplying pipes for heating supply and water sectors of the regions with severe weather conditions. Moreover, the products of POLYMERTEPLO has been used in Chukotka for many years.

ISOPROFLEX-Arctic 90 mm pipes with Teplomag integrated heating system were chosen for construction of the new water pipeline. Estimated economical effect from using this system is 2 mln rubles per year. All costs for construction of water pipeline using this method will be justified in 4–5 years. After than time and considering the guaranteed life time financial savings will be significant.

