References

Transport of post-flotation waste – process pipelines, KGHM



Uponor involvement

- WehoPipe pipes DN 125, 180, 225, 315, 450, 500, 710, 800, 900, 1000, 1100, 1200, 1300, 1370 PN7,5-PN20 - a total of approx. 41,5 km of pipeline

Transport of post-flotation waste – process pipelines

For many years Uponor Infra has suppplied KGHM with high-quality polyethylene piping systems that transport water and slurry.

KGHM Polska Miedź SA – is one of the largest copper and silver producers in the world. The raw materials base of KGHM Polska Miedź S.A. includes the copper ore deposit, which is the largest in Europe and one of the biggest in the world. The mining areas of the size of approx. 470 km^2 were created for the purpose of its mining.

Project Facts:

Location Poland	Completion 2021
Building Type Industrial	Product systems Tailor made constructions, Industrial pipes
Project Type Renovation	

Partners

Investor:
KGHM Polska Miedź S.A.

Contactors:
PBH ODRA 2
PeBeKa S.A. - Lubin
PPHU Zachód Sp. z o.o. – Polkowice
P.P.U. „MONT -INSTAL'' Sp. z o.o. –
Polkowice
Arkop Sp. z o.o. - Wrocław
P.B.M TOLOS Sp.J.- Żory

KGHM has in place its own integrated production structure, which includes three mines (ZG „Lubin'', ZG „Rudna'', ZG „Polkowice-Sieroszowice''), three copper smelters („Głogów", „Legnica'', „Cedynia''), and branches supporting the core activity (Ore Enrichment Facilities. Hydrotechnical Facility). The Hydrotechnical Facility is responsible for storage and management of the waste created during the production process. The basic tasks of the Facility are related to the water-sludge management of three Ore Enrichment Facilities, which conduct the copper ore mining output enrichment operations under a flotation method. The post-flotation waste is a slurry, which is transported via pipelines to Żelazny Most tailings pond. The solid phase sedimentation process takes place at the storage facility and the cleaned water is collected and re-directed to the Ore Enrichment Facilities.

Beginning of cooperation

The first deliveries of PEHD pipelines for slurry transport - d.800 PN12,5 – were executed by Uponor Infra (former KWH Pipe) in 2000. PBH Odra 2 was the contractor in this investment. This investment concerned crossing of the over under the submerging method. The length of the submerged section was 168 m.

Another interesting investment executed at Hydrotechnical Facility concerned the delivery of pipelines d.710mm SDR17,6 for Pebeka S.A. This investment concerned renovation of steel slurry pipeline d.813mm with the use of PEHD pipe under the long relining method. The longest section of the pipeline inserted under a single operation was 1000m.This was a record, which allowed the Contractor to receive Limbur award in category: Project of year 2002 - Renovation.

Polyethylene proven in harsh environments

In 2008, Uponor Infra took part in an interesting modernisation project involving an existing polyethylene pipeline, which had to be replaced due to an increase in slurry production. The DN/OD 500 mm pipeline was replaced by a new 2.5 km double DN/OD 900 mm pipeline and installed above ground level on existing steel supports. When KGHM inspected the dismantled, 10 year-old pipeline, it found that the pipe bore little signs of use. Paweł Pill of Uponor Infra, project manager in the Industrial Sales Department, who was present at the inspection, confirms that the pipeline was as good as new, with no visible signs of wear. ''Even the inner welding beads were intact while in the same period of time the steel and concrete pipelines experienced numerous glitches,'' he says. This proved that polyethylene is the optimal choice for conveying highly abrasive mining waste at KGHM.

Further investments – futher kilometres of pipes

The biggest investment at Hydrotechnical Facility was executed jointly with Tolos from Żory in 2009. It concerned laying of the double line of PEHD pipelines of following parameters:

- d.1000 SDR11 PN16 - approx. 2,5km

- d.1000 SDR21 PN8 - approx. 1km
- d.1300 SDR17 PN10 - approx. 2km
- d.1370 SDR17 PN10 - approx. 1,4km

Investment executed during the years 2014-2015 included the delivery of pipelines d.1250 SDR17 PN10 (approx. 1,5 km) and d.1290 SDR13,6 PN12,5 (approx. 3km).

Versatility of the PE-HD technology

KGHM Polska Miedź S.A. is a company operating on a huge scale, and as such it expects efficiency, innovation and top technological solutions. The projects carried out over the years by Uponor Infra and Hydrotechnical Facility confirm the highest quality and versatility of the PE-HD technology. Uponor Infra has proven itself to be a reliable partner, ready to listen and assist in making even the most demanding engineering projects work.

Transport of post-flotation waste – process pipelines









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