Projekts

Transport of slurry supernatants – process pipelines, KGHM



Uponor iesaiste

- WehoPipe pipes and fittings DN1500 PN8 – 2310 m, DN1200 PN10 - 1200 m, DN900 PN10 - 7200 m, WehoPipe RC pipes DN650-750 PN8 - 2800 m

Transport of slurry supernatants – process pipelines for KGHM

Positive experiences of KGHM Polska Miedź S.A. with transport of post-flotation waste determined the decision to use the PEHD systems for the transport of slurry supernatants from the tailings pond.
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.

Projekta fakti:

Location
Poland

Pabeigts
2021

Ēkas tips
Rūpnieciskais īpašums

Product systems
Tailor made constructions, Industrial pipes

Projekta veids
Jaubūve

Partneri

Investor:
KGHM Polska Miedź SA

Contractor:
"Tolos" Piotr Walczak sp. k.

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.

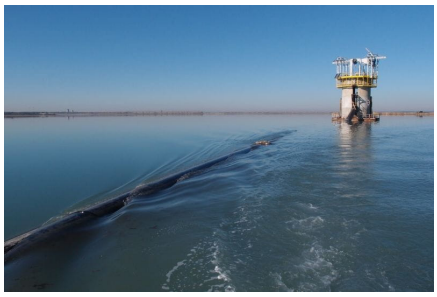
The current positive experiences of KGHM Polska Miedź S.A. with transport of post-flotation waste determined the decision to use the PEHD systems also for the transport of slurry supernatants from the tailings pond. The decisive advantage of PEHD systems concerns their reliability and ability to support longitudinal loads, which has a special significance in the case of pipelines installed in the area of Żelazny Most facility. The first installation of this type concerned the construction of pipeline DN1500 PN10 of the length of 2310m, which despite difficult conditions and installation during the winter period, was completed over a 4 month period.

Another investment concerned a prototype installation related to the modernisation of slurry supernatant intake located within the basin of the tailings pond. The water intake towers is equipped with siphon intake, which takes water directly from the reservoir. The location of the intake in close vicinity of the discharge points and embankments surrounding the reservoir caused the need to find a solution, which would allow to intake water of appropriate cleanness. In order to ensure the better cleanness of water collected from the tailings pond through intake ''E'', it was resolved to extend the supply section by pipeline PEHD DN1200 of the length of 600m for the purpose of taking water from the area of bigger depth and distance from the silting deposits. The inlet is suspended to a float with the option of adjusting the position of the overflow edge below the water level in the tailings pond. The floating pipeline is stabilised on surface of the reservoir by the anchors. All works related to connection of the pipeline were completed during 14 days, while the process of submerging the pipelines itself was completed during 48 hours. The aforementioned solution was a prototype solution and as it met completely expectations of the Investor, a similar installation is planned for subsequent water intakes.

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