



MINE BACKFILL - PASTEFILL CANADA



SUMMARY

Industry: Mine Backfill

Product: ArmorPIPE™ 7500

Plant: Paste Backfill Plant

Location: Northern Ontario, Canada

Summary: Gravity feed 400 tph sand/tailings paste backfill, transported through over 5km of pipe to stopes 500 to 3000m below the surface.



PROBLEM DESCRIPTION

API X52 schedule 140 pipes holing in 1.2 million tonnes of placed fill.
The additional complications of thinned casings peeling internally were
resulting in costly blockages.

SOLUTION



7500 Series Paste Fill Lined Pipe

ArmorPIPE™ 7500 Series pipe was recommended as the most suitable material based on the process conditions and expected mine life.

** “Positive laboratory and field testing results led to the installation of energy absorbent ceramic composites (Imatech 7500 Series) in all primary vertical boreholes.” (White, McGuinness, & Newman, 2013, pp. 7)*

** “The high bonding and positive wear results of Imatech’s 7500 Series ArmorPIPE™ led to its selection as the most economical solution.” (White, et al., 2013, pp. 3)*

** “After 3.48 MT (million tonnes) of pastefill, wear rates and lining bond properties have been shown to meet or exceed design criteria. Confidence in the material has since resulted in the decision to install this lined piping in all primary horizontal loop sections. (White, et al., 2013, pp. 7)*

RESULTS

The ArmorPIPE™ 7500 Series pipe is currently still in service after 4 million tonnes with approximately 80% of the lining remaining.

** “Extended pipe life resulting from increased wear resistance will mean a primary system designed to last the remaining 7-8 years of mine life and require little to no replacement of worn pipe.” (White, et al., 2013, pp. 5)*

The ArmorPIPE™ 7500 Series along with increasing pipe life, also led to a reduction in contract labour and is estimated to yield an internal rate of return of 25-30%, with a payback period of less than 3 years.

* White, A., McGuinness, M., & Newman, V. (2013). Pipeline Wear Solution at Kidd Mine: Energy Absorbent Ceramic Composite. Australian Centre for Geomechanics, pp.3-7



In service after 4 million tonnes following replacement- approx. 80% of lining remains.



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