

Mining

NanoSteel® ID Clad Wear Pipe Extends Wear Life of Concrete Delivery Line by 13.1x

Super Hard Steel®

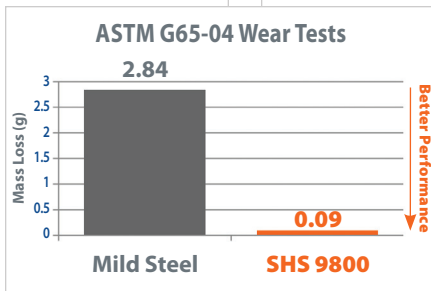
Problem: Severe Slurry Abrasion

Saskatchewan government regulations require spent sections in uranium mines to be completely encased in concrete. The transport of massive amounts of concrete to spent mine locations underground and process of gradual encasement can go on for many years.

Historically, concrete has been transported from surface to underground operations through a vertical delivery system fabricated from L80 mild steel pipe. At a northern Saskatchewan uranium mine, severe wear from slurry abrasion results in costly down time from the pipe requiring replacement every 16 months.

Solution: NanoSteel ID Clad Wear Pipe

Seeking an alternative which will increase wear resistance and last the remaining life of the project, the Saskatchewan uranium mine installed a delivery system with NanoSteel's SHS 9800 alloy welded to the inside diameter of L80 pipe. Mine engineers have projected the ID clad NanoSteel wear pipe to last 17.5 years, an increase in wear life by a factor of 13.1x which will save the mine more than \$1 million in replacement costs.



In ASTM G65-04 wear testing, SHS 9800 is 31.6 times more wear resistant than mild steel



Male and female threaded joints are connected on site with zero difference couplings

Threaded Joints Result in Faster Installation

Many vertical delivery systems are installed by welding pipe joints together, which is a slow joining method. For the Saskatchewan uranium mine, NanoSteel ID clad wear pipe was threaded during manufacture and connected on site with zero difference couplings, a faster joining method which greatly reduced installation time.

Vertical Concrete Delivery System

Concrete delivery at the surface

L80 casing with SHS 9800 overlay welded to pipe ID

Underground section where uranium collection has been completed is sealed in concrete

1,800 ft (550 m)

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Additional Information

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Wear pipe ID overlay applied by a process developed by Trimay® Wear Plate Ltd. using technology under license from The NanoSteel® Company.