



Mining

NanoSteel® Overlay Wear Plate Exceeds
Wear Life of Brinell 500 Wear Plate by 4x

Problem: Severe Sliding Abrasion

At an underground molybdenum mine in Colorado, a small fleet of 90 ton side dump haulpak trucks transport ore from loading chutes to a primary crusher.

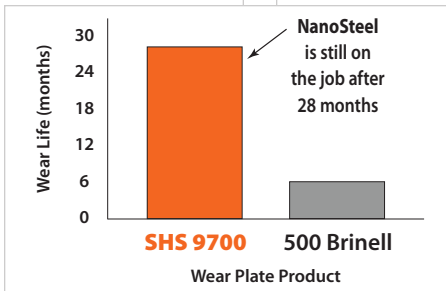
When a truck dumps ore at the crusher, the entire load slides over a pair of lower side doors, each lined with a 1/2" (13 mm) Brinell 500 wear plate. Severe sliding abrasion results in the Brinell 500 wear plates requiring replacement every 6 months.

Solution: NanoSteel Overlay Wear Plate

To reduce the number of replacement cycles for side door wear plates, in December 2008 the mine replaced a pair of Brinell 500 wear plates on one truck with NanoSteel SHS 9700 overlay wear plates which feature higher resistance to severe sliding abrasion and longer service life.

Wear Plate	Type	Thickness	Overlay	Substrate	Hardness	ASTM G65-04, Procedure A
NanoSteel SHS 9700	Overlay	1/2" (13 mm)	1/4" (6 mm)	1/4" (6 mm)	66 - 69 HRc	0.13 g mass loss
Brinell 500	Q&T	1/2" (13 mm)	—	—	49 - 53 HRc	1.20 g mass loss

Super Hard Steel®



NanoSteel SHS 9700 has demonstrated a 4x improvement over Brinell 500 wear plate



NanoSteel SHS 9700 overlay wear plate, 1/4" (6 mm) overlay on 1/4" (6 mm) substrate



NanoSteel wear plates remain in service after hauling over 3 million tons in 28 months

Result: NanoSteel Exceeds 500 Brinell Wear Life by more than 4x

The NanoSteel SHS 9700 overlay wear plates remain in service after hauling more than 3 million tons in 28 months while 500 Brinell plates are replaced at an average rate of every 6 months. Benefits to the mine include

Elimination of

- 3 pairs of replacement wear plates
- Manpower hours during 3 replacement cycles

Increases in

- Truck service time
- Production output and revenue

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