

## Case Study: Performance under Sliding Wear

### Snow Plough Blade - extreme, constant abrasion and impact

#### Test Goal:

To achieve a wear protection component for snow plough blades which can last 2,000 km clearing difficult road surfaces in Northern Sweden.

#### Lower Performance of Competitors:

500HB hard steel components replaced every 700 km, after wearing by 100 mm. They are replaced 3 times a season. Standard tungsten carbide components are vulnerable to impact, chipping and premature failure on dirt roads. These are bulky, applied *via* lengthy brazing techniques, which detrimentally increases blade thickness.

#### Ferobide Test Outline:

- 3<sup>rd</sup> Party field test conducted by global manufacturer of blades and cutting edges
- Lorry ploughing road at a speed of 40 mph
- Clearing asphalt and dirt roads on varied terrain, from bumpy to smooth
- Standard ploughing routines over a period of 2 months with approx. 6 hours work per day
- Ferobide wear edges mounted onto the leading edge of plough blades
- Ferobide represents 8 mm wear layer in constant contact with road surface

#### Superior Outcomes of Ferobide Test:

- ✓ Ferobide gives lifetime increase of up to 20 times
- ✓ Ferobide components covered 2,260 km with only 15 mm wear
- ✓ One set of Ferobide lasted the entire season, not needing to be replaced.
- ✓ Ferobide yields longer-lasting and sharper leading edges compared to standard tungsten carbide



*Ferobide - superior wear protection across all road surfaces*

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## Tunnel Boring Machine – extreme, constant sliding wear

### Ferobide Test Goals:

To achieve a wear protection component for the cutterhead which has a 12 month lifespan.

### Lower Performance of Competitors:

500HB hardened steel protection components, with extra hardfacing, are placed around cutterheads and are replaced every 2-5 months, at which time the full set is worn out.

### Ferobide Test Outline:

- Hallandsasen Rail Link Tunnel Project, Sweden.
- 3<sup>rd</sup> party test conducted by SkanskaVinci on operational tunnel boring machine
- 120 km tunnel being bored in highly abrasive granite earth
- The high speed of the application subjects the area around cutterhead to extreme forces
- Ferobide plates welded around the cutterhead

### Superior Outcomes of Ferobide Test:

- ✓ Ferobide gives lifetime increase of 6-7 times
- ✓ After 5 months Ferobide still has 85% wear life left
- ✓ Ferobide exhibits a work-life of 26 months
- ✓ Ferobide reduces downtime significantly



## Chute Linings – high, intermittent abrasion and impact

### Ferobide Test Goals:

To achieve a wear protection component layer in chute which lasts 15+ operational weeks at an iron ore processing plant in Germany, with a particle size <65 mm.

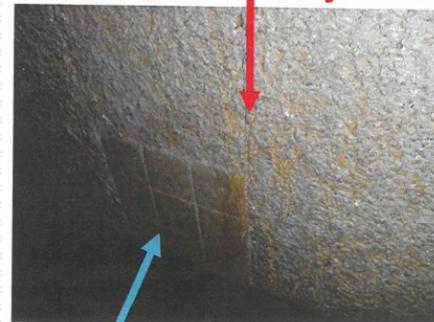
### Lower Performance of Competitors:

Standard casted carbide wear plates wear down significantly, by 8 mm in 15 weeks.

### Superior Outcomes of Ferobide Test:

- ✓ After 15 weeks, Ferobide had only worn 1 mm

**Casted Plate fully worn**



**Ferobide still working**

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