



TOOL STEELS FOR MINING APPLICATIONS

voestalpine High Performance Tool Steels offer increased wear resistance, toughness and ductility. Resulting in longer component life, and reduced total cost of ownership.

YOUR ADDED VALUE

The mining industry is one of the most demanding industry sectors when it comes to component wear and abrasion damage.

Traditionally, many of the parts produced for this sector rely on standard high tensile steel grades, but what if there was another way?

The adoption of voestalpine high performance tool steels in the mining sector, has been proven to be successful across a wide range of applications, from drill clamps to slurry valves. The resulting performance increases the service life of the component over traditional high tensile grades, which means that tool steel can be an extremely cost effective solution for many applications.

voestalpine offers an extensive selection of tool steels. With over 250 different grades available to choose from, we have material grades designed to perform in the most demanding environments.

PERFORMANCE COMPARISON

- » **Significantly improved component life**
- » **Increased machine up-time / availability**
- » **Extend maintenance intervals**
- » **Reduced cost of ownership**

Main Properties

High strength / hardness (up to 64 HRC)

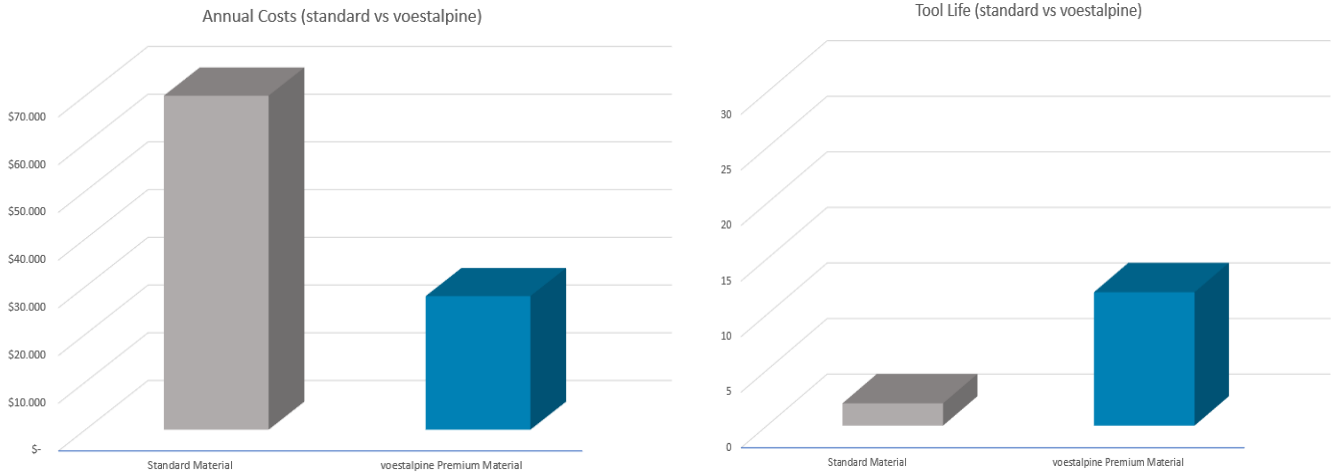
High wear resistance

High ductility (safety against cracks)

High toughness

INDUSTRIAL PERFORMANCE COMPARISONS

Break Out Clamp Jaws (Standard Material vs voestalpine Premium Grade)



*Case studies data based on actual customer use case. Material performance results will vary based on application, material selection and equipment usage.

VOESTALPINE PREMIUM MATERIALS

Our tool steels offer an excellent combination of toughness and wear resistance, which makes them an ideal replacement for traditional quenched and tempered or high strength steels in a variety of applications. Such as:

- » Breakout clamps
- » Drill clamps
- » Spreaders
- » Slurry pump valves - seat & disc
- » Retaining bolts
- » Conveyor rollers
- » Winch jaws
- » Jackhammer attachment
- » Hydraulic manifolds
- » Sparges in flotation column cells
- » Lab vibrating cup mill



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January_2024_EN

MATERIAL GRADES

| | |
|------------------------|---------------------------|
| Böhler K110 | Abrasion |
| Böhler K245 | Abrasion/Impact Toughness |
| Böhler K340 | Abrasion/Impact Toughness |
| Böhler M238 | Impact Toughness |
| Böhler W302 | Abrasion/Impact Toughness |
| Böhler W360 | Abrasion/Impact Toughness |
| Böhler W403 | Abrasion/Impact Toughness |
| Böhler K700 | Abrasion/Impact Toughness |
| Uddeholm Calmax | Abrasion/Impact Toughness |
| Uddeholm Orvar Supreme | Abrasion/Impact Toughness |
| Uddeholm Sleipner | Abrasion |
| Uddeholm Vanadis 8 | Abrasion |

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ONE STEP AHEAD.