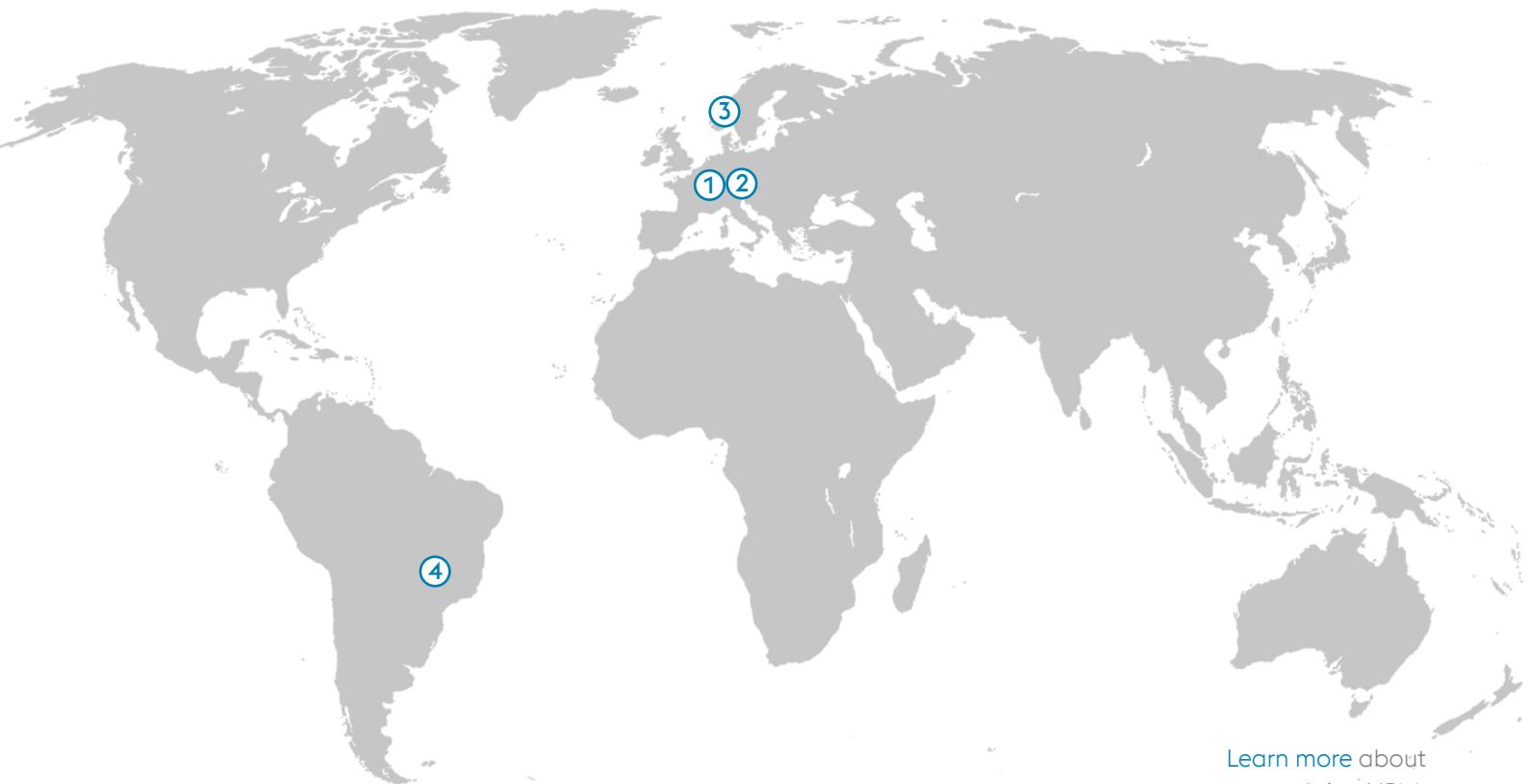




## MINING & ROCK HANDLING

**High performance materials and solutions for  
the mining industry**



[Learn more](#) about voestalpine HPM:



# OUR COMPANY GLOBAL AVAILABILITY

At voestalpine High Performance Metals, we deliver premium steel and non-ferrous alloys from a unified global network. With multiple production sites and over 130 sales and service locations worldwide, we ensure consistent quality and customer satisfaction across every product, service, and delivery. All our steel mills operate under the highest international standards, guaranteeing reliable, safe, and certified materials for the most demanding applications in the food and beverage industry.

- 1** **voestalpine Böhler Edelstahl – Kapfenberg, Austria:** One of the world's leading suppliers of high-speed steels, tool steels & specialty materials.
- 2** **voestalpine Böhler Bleche – Mürrzuschlag, Austria:** Delivers cross-rolled sheets and plates as well as products with exceptional uniformity in mechanical and physical properties.
- 3** **Uddeholm – Hagfors, Sweden:** Is one of the world's leading producers of tool steels for industrial applications, with over 300 years of metallurgical expertise.
- 4** **Villares Metals Brazil – Sumaré, Brazil:** Specializes in steel and specialty alloys that combine reliability, strength and customization.

# MINING & ROCK HANDLING APPLICATIONS

## DRILLING & EXPLORATION

We offer a diverse range tool steels characterized by their high hardness and wear resistance. These properties are ideal for drilling components, such as break out clamps and tong dies. Improving their performance so they maintain their integrity for longer in the most extreme operating conditions.



## PUMPING & FILTRATION

Our experience in the Oil & Gas industry means we have a wide range of steel grades available designed to offer a combination of corrosion and abrasive wear resistance. These properties are ideal for wide range of pumping components, such as valves and valve seats.



## WEAR COMPONENTS

Our unique range of powder metallurgy alloy grades are designed specifically for high hardness, toughness, and wear resistance. These properties are ideal for a range of wear components used in the mining industry. These grades can perform in the harshest mining conditions, helping extend the lifespan of assets and equipment.



## CLAMPING & GROUND SUPPORT

Our ESR material grades are designed for fatigue, creep and cracking resistance. This combination of properties are ideal for many clamping components, such as rock bolts and clamping plates, ensuring these parts can withstand the high stress conditions typical in mine operations.



## MINERAL PROCESSING

Characterized by their high wear and chipping resistance, these material grades are designed with the ideal balance of properties for ore processing components, such as pulverizers and ball mills. Helping your assets maintain consistent production output for longer.



## MACHINED COMPONENTS

Our tool steels meet the most stringent quality requirements to ensure the highest possible performance. This makes our tool steels an ideal alternative to standard high tensile and tungsten carbide material grades in a wide range of mining and mineral processing applications.



# OUR SOLUTIONS

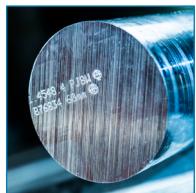
voestalpine Grades			Standards		
BÖHLER	ASSAB Uddeholm	Villares	W.N.r. (SEL/EN)	Certificate	Max. HRC / HB / HV
M200	-	-	1.2312	-	330 HB
M238 / M238 HH	718 HH / Impax Supreme	VP20ISO	1.2738	-	330 / 400 HB
-	Nimax	-	PATENT	-	400 HB
K100	-	-	1.2080	-	61
K107	XW-5 / Sverker 3	VC131	1.2436	-	61
K110	XW-42 / Sverker 21	VD2	1.2379	-	62
K305	Rigor		1.2363	-	61
K340 ISODUR	88 / Sleipner	VF800ATIM	PATENT	-	63
K455	-	-	1.2550	-	58
K490 MICROCLEAN	Vanadis 4E SuperClean	-	PATENT	-	64
K600	-	-	1.2767	-	55
K700	-	-	1.3401	-	600 HV
K888 MATRIX	-	-	PATENT		64
-	Calmax	-	1.2358	-	60
W302 ISOBLOC	8407S / Orvar Supreme	VH13IM	1.2344	-	54
W360 ISOBLOC	Unimax	VTMPLUS	PATENT	-	57
S390 MICROCLEAN	Vanadis 30 SuperClean	-	PATENT	-	68
S600	-	VWM2	~1.3343	-	66
S690 MICROCLEAN	-	-	1.3351	-	66
-	Caldie	-	PATENT	-	60
K390 MICROCLEAN	Vanadis 8 SuperClean/XL	-	PATENT	-	64
Corrosion Resistant Grades	M333 ISOPLAST	Mirrax ESR	VIMCOR	-	50
	M310 ISOPLAST	Stavax ESR	VP420IM	1.2083	52
	M303 HH	Mirrax 40	V2316MOD	1.2316	40
	M315	RoyAlloy	-	PATENT	310 HB
	M340 ISOPLAST	-	-	PATENT	55
	M368 MICROCLEAN	-	-	PATENT	56
	M390 MICROCLEAN	Elmax SuperClean	-	PATENT	60
	N690		1.4528	-	61
		Corrax	V630IM	-	50
	-	Tyrax ESR	-	PATENT	58
		Vanax SuperClean	-	PATENT	60
	A903	-	-	1.4462	Upon Request
	A913A	-	-	1.4410	Upon Request
	L718	-	-	2.4668	Upon Request
	L718 API	-	-	N07718	Upon Request

### Applications

Drilling Systems	Clamping Systems	Pumping Systems	Mineral Processing	Wear Parts	Machined Parts	Applications
•	•	-	-	•	•	Shaft keys, Manifolds, Holders
•	•	-	-	•	•	Drill rod tools, Manifolds, Pins, Shafts, Gears
•	•	-	-	•	•	Wear plates, Impact tools, Pins, Shafts, Gears
•	•	•	•	•	•	Wear plates, Pump valve seats, Vibrating mill cups
•	•	•	•	•	•	Wear plates, Pump valve seats, Tong dies, Liner bolts
•	•	•	•	•	•	Wear plates, Pump valve seats, Tong dies, Liner bolts
•	•	-	•	•	•	Breakout clamps, Tong Dies
•	•	-	•	•	•	Breakout clamps, Tong Dies
•	•	-	•	•	•	Breakout clamps, Tong dies, Rock breaker tools
-	-	-	•	•	-	Breakout clamps, Cutting inserts, Knives
•	•	•	•	•	•	Breakout clamps, Tong dies, Rock breaker tools
-	-	•	•	•	-	Wear plates, Spreaders, Grading plates
•	•	-	•	•	•	Breakout clamps, Cutting inserts
•	•	-	•	-	•	Breakout clamps, impact tools, Pins, Shafts
•	-	-	•	•	•	Shafts, Pins, Bolts, Pistons, Gears, Wrenches
•	-	-	•	•	•	Shafts, Pins, Bolts, Pistons, Gears, Wrenches
•	-	-	•	•	•	Wear plates, Rotary drill components, Cutting tools
•	•	-	•	•	•	Wear plates, Cutting tools
•	-	-	•	•	•	Wear plates, Cutting tools
•	-	-	•	•	•	Breakout clamps, Impact tools, Pins, Shafts
•	-	-	•	•	•	Wear plates, Cutting tools
-	-	•	•	•	•	Pump blocks, Pins, Gears, Hydraulic parts
-	-	•	•	•	•	Pump blocks, Pins
-	-	•	-	•	•	Manifolds, Pump blocks, Pins, Gears, Hydraulic parts
-	-	•	•	•	•	Manifolds, Pump blocks, Pins
-	-	•	•	•	•	Pump valves, Seats, Disks
-	-	•	•	•	•	Pump valves, Seats, Disks
-	-	•	•	•	•	Floating sparges, Strainers
•	-	•	•	•	•	Pump valves, Seats, Disks, Wear parts
-	-	•	•	•	•	Manifolds & Pump Blocks
-	-	•	•	•	•	Pump valves, Seats, Disks
-	-	•	•	•	•	Pump valves, Seats, Disks, Wear parts
-	-	•	-	•	•	Impellers, Inducers
-	-	•	-	•	•	Impellers, Inducers
•	-	•	-	•	•	Manifolds, Flow diverters, Stators, Rotors
•	-	•	-	•	•	Manifolds, Flow diverters, Stators, Rotors

# PRODUCT VERSIONS AND DELIVERY SIZES

## ROUND BAR



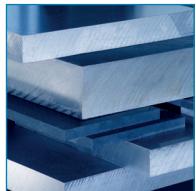
- » Ø 12.5 – 610mm\*
- » production lengths
- » special lengths
- \*larger sizes upon request

## FLAT BAR



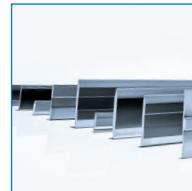
- » hot rolled
- » blasted
- » pickled
- » surfaces / edges ground
- » dimensions on request

## PLATES / SHEETS



- » thickness 0.8 – 100mm
- » retail sizes
- » various delivery conditions (sawn, ground, 6-side machined, etc.)

## SHAPED PROFILES - ROLLED / DRAWN



- » on coils
- » in rings
- » straightened in bars

## WIRE ROD



- » Ø 5 – 15 mm
- » pickled / on coils
- » blasted and pickled
- » hot rolled
- » in various executions

## ENGINEERED PRODUCTS



- » tailor-made solutions
- » machined "ready-to-use"
- » heat treatment & surface treatments available

## HEAT TREATMENT



- » vacuum & controlled atmosphere processes
- » optimized hardness and microstructure
- » stress relieving and annealing

## SPECIALTY COATINGS



- » reduce abrasive wear and friction
- » hard coatings based on ionized metal vapor

# SUSTAINABILITY AND CIRCULAR ECONOMY

## THE LATEST TECHNOLOGY AND NEWEST ENVIRONMENTAL STANDARDS

At all our production sites, we set new standards for production quality, process reproducibility, and environmental impact. In addition to using resources responsibly, we are constantly implementing new measures for environmentally friendly processes and production.

The most important raw material is metal scrap. Therefore, establishing closed material loops internally and with customers is essential to ensure a sustainable supply chain, reduce our usage of primary raw materials and improve our carbon footprint.

With our integration of products, services and technical advisory, we drive meaningful change across our business sectors.

## CIRCULAR ECONOMY

Through our unique, integrated service network, we create long-lasting performance that meets the needs of our planet and future generations.

We collaborate closely with our customers on their demanding applications. Leading by example, we enable them to engage in sustainable initiatives like the reuse of their own scrap and thereby enabling the production of more sustainable products.

Together, we inspire the change in our industries by always thinking and walking one step ahead.



Reducing **CO<sub>2</sub> emissions**  
by 50 % in our operations  
by 2029



Using **over 90% of recycled**  
scrap and secondary raw  
materials in our production  
processes by 2030



Contributing to the voestalpine  
group target of reducing **CO<sub>2</sub>**  
**emissions by 25% in our supply**  
**chain by 2029**



[Learn more](#)  
about inSPire, our  
sustainability initiative:



**voestalpine High Performance Metals GmbH**

Donau-City-Strasse 7

1220 Vienna

T. +43 50304/30

E. [mining@voestalpine.com](mailto:mining@voestalpine.com)

[www.voestalpine.com/hpm/mining](http://www.voestalpine.com/hpm/mining)

**voestalpine**

ONE STEP AHEAD.