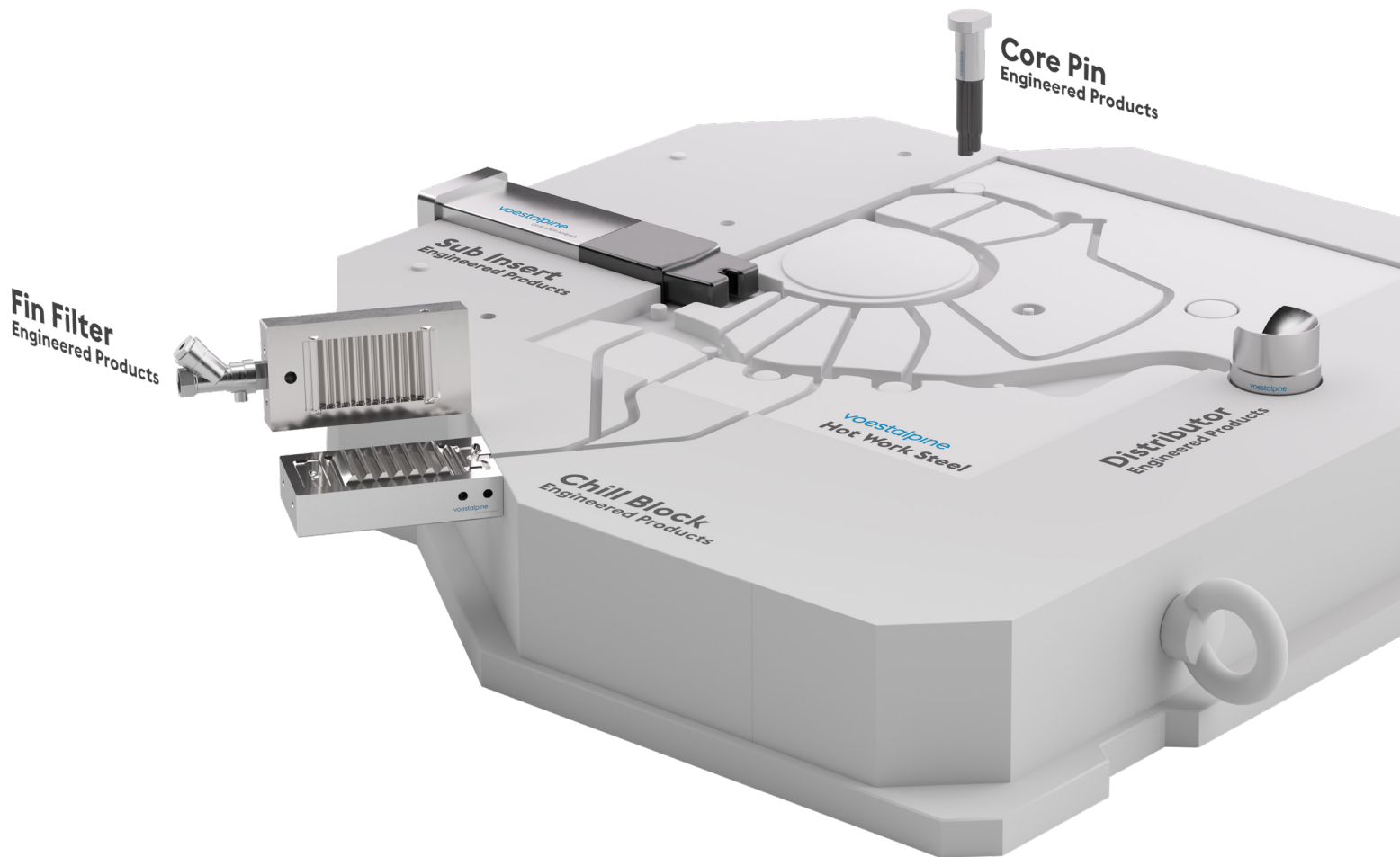


Engineered Products



ENGINEERED PRODUCTS FOR DIE CASTING

designed for pure performance



WHO WE ARE

The High Performance Metals Division of the voestalpine Group focuses on the production and processing of high-performance materials and customer-specific services.

The division is the global market leader in tool steel and one of the leading suppliers of diverse products made from materials of the highest quality. The most important

customer segments are the automotive, oil and gas exploration, mechanical engineering, consumer goods and aerospace industries. With 140 locations in 40 countries on every continent, we provide our customers with outstanding service wherever they may be located. We offer our customers production, sales, and service from a single source.

CHALLENGES IN DIE CASTING

The demands on die casting and its products are constantly increasing. When things get hot, tool steel must not only be tough but also particularly pure. Strength, toughness, machinability, weldability, and corrosion resistance are crucial properties of steels for die casting molds.

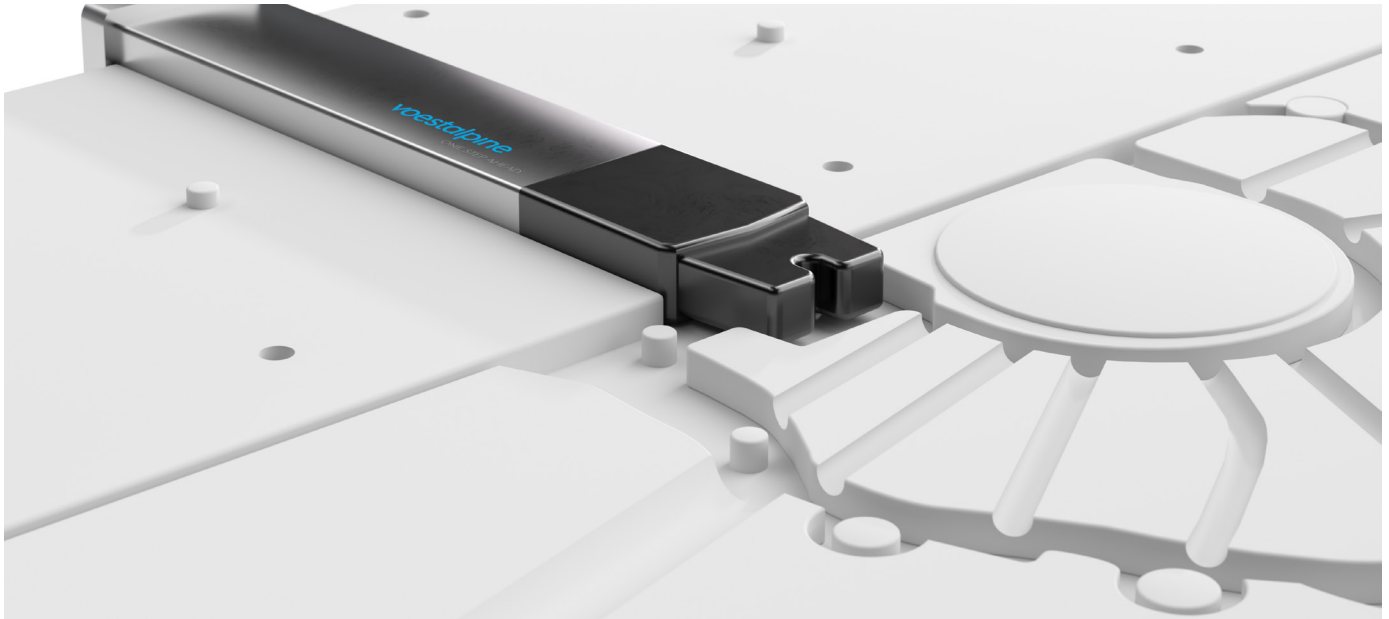
A clear trend is also noticeable in the design of cast parts:

- » Larger parts
- » Thinner wall thickness
- » More complex geometries
- » Tighter tolerances

Based on our many years of global experience, we know that robust and durable die casting molds are one of the most important factors for increasing overall equipment effectiveness (OEE).

Lower scrap rates, shorter cycle times, as well as reduced maintenance efforts and downtimes, pose significant challenges for the die casting industry and mold making.

With the innovative voestalpine Engineered Products, you can take your productivity to the next level!



ENGINEERED PRODUCTS? TAILOR-MADE PRODUCTS FOR DIE CASTING!

Engineered Products are ready-to-use, custom-made parts made from premium materials by BÖHLER and Uddeholm. We design and manufacture these with all the necessary production steps, such as machining, heat treatment, and high-quality PVD coating.

The customized products are developed with our many years of experience to enhance the performance of your production and increase efficiency.

voestalpine Engineered Products enable higher productivity and lower overall operating costs per cast part. Due to their outstanding technical properties and long service life, they ensure higher part quality and contribute to reducing scrap, maintenance, and machine downtime.

Depending on the requirements and application, we offer not only conventional manufacturing but also additive manufacturing. This process allows for conformal cooling, resulting in shorter cycle times while simultaneously achieving significantly increased service life.



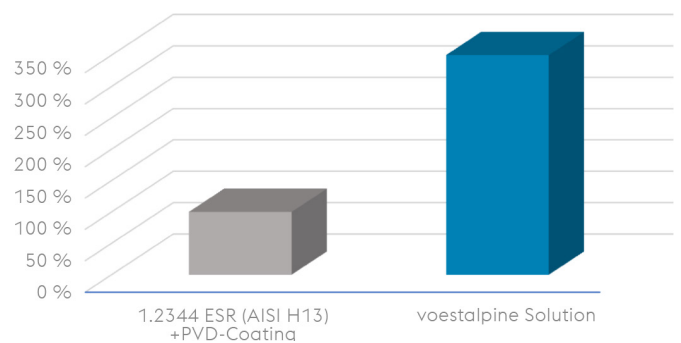
Discover our wide range of Engineered Products for the die casting industry on the following pages, and be impressed by our outstanding innovations.

Our specialists are here to help you find the right solution!

CORE PINS CONVENTIONAL



Lifetime Improvement



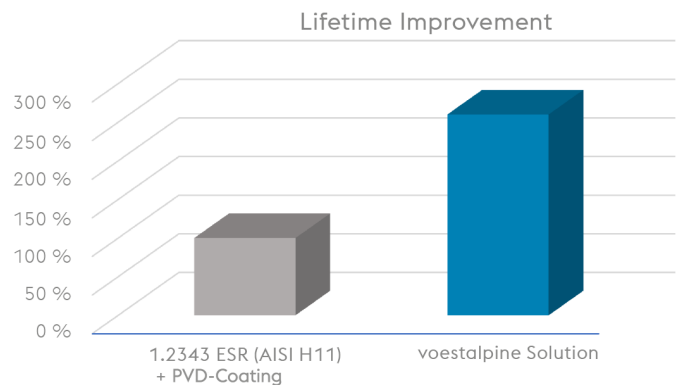
Industrial performance comparison

- » Increased lifetime
- » Reduced maintenance and cleaning effort
- » Reduced downtime
- » Reduced scrap rate

Technical data

Material	Premium Materials from BÖHLER/Uddeholm
Hardness	47 – 57 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Cooling	with or without

SUB INSERTS CONVENTIONAL



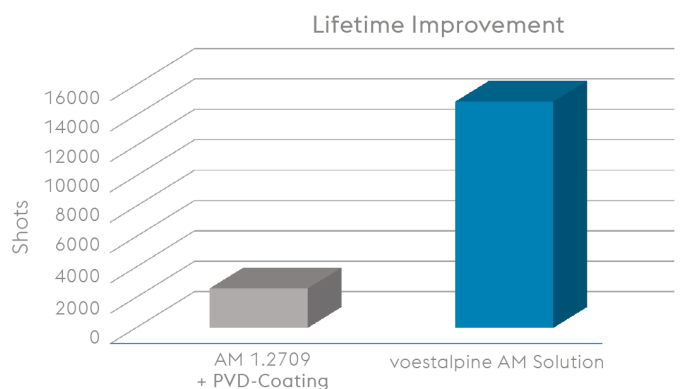
Industrial performance comparison

- » Increased lifetime
- » Reduced maintenance and cleaning effort
- » Reduced downtime
- » Reduced scrap rate

Technical data

Material	Premium Materials from BÖHLER/Uddeholm
Hardness	47 – 57 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Cooling	with or without

SUB INSERTS ADDITIVE



Industrial performance comparison

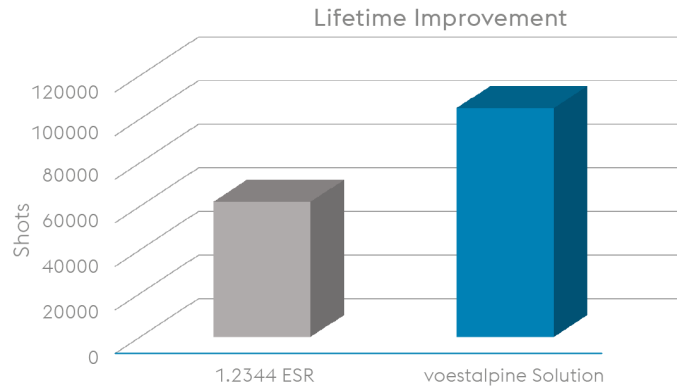
- » Increased lifetime
- » Reduced maintenance and cleaning effort
- » Reduced downtime
- » Reduced scrap rate

Technical data

Material	Premium AM-Materials from BÖHLER/Uddeholm
Hardness	47 – 57 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Conformal cooling	customized, conformal

* Significant increase in temperature control efficiency and lifetime with conformal cooling

DISTRIBUTORS CONVENTIONAL



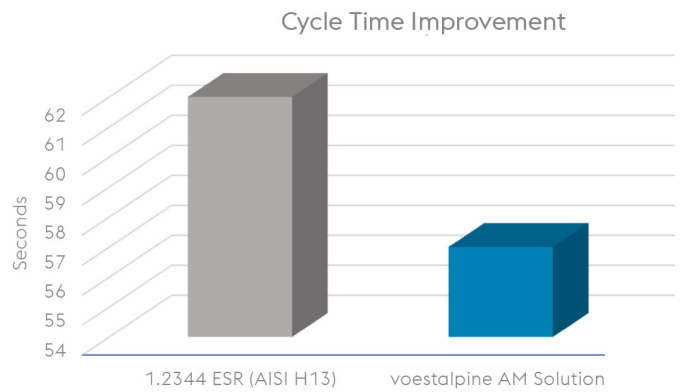
Industrial performance comparison

- » Increased lifetime
- » Reduced maintenance effort
- » Reduced fluctuations in casting quality

Technical data

Material	Premium Materials from BÖHLER/Uddeholm
Hardness	48 – 56 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Cooling	with or without

DISTRIBUTORS ADDITIVE



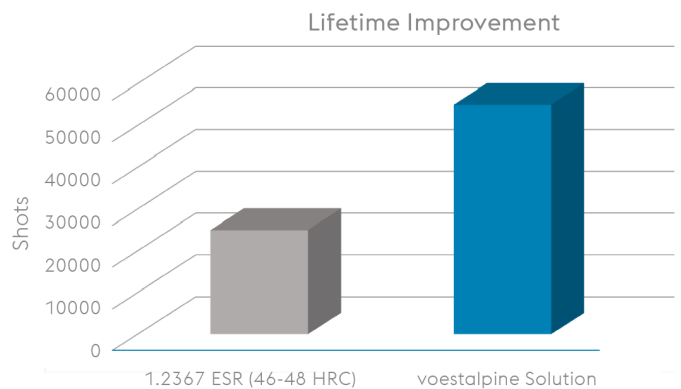
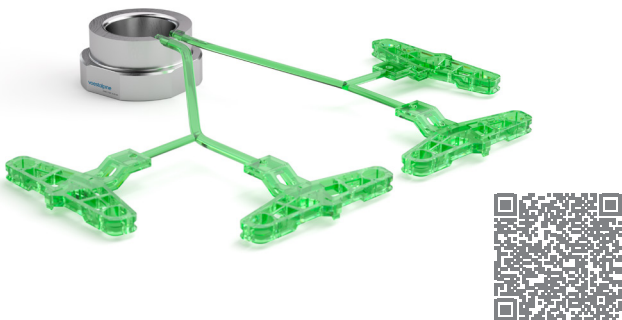
Industrial performance comparison

- » Reduced cycle time
- » Increased lifetime
- » Reduced maintenance effort
- » Reduced fluctuations in casting quality

Technical data

Material	Premium AM-Materials from BÖHLER/Uddeholm
Hardness	48 – 56 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Conformal cooling	customized, conformal

DISTRIBUTOR RINGS CONVENTIONAL



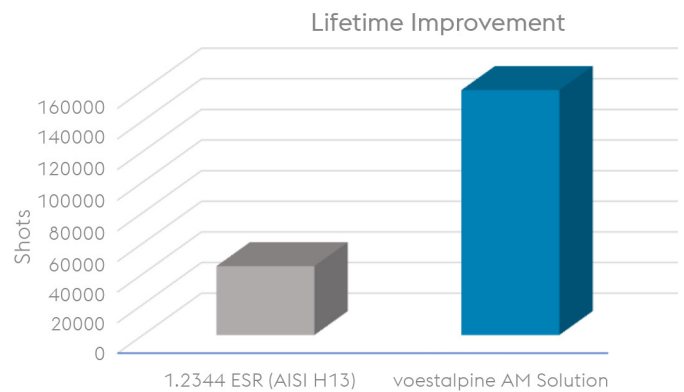
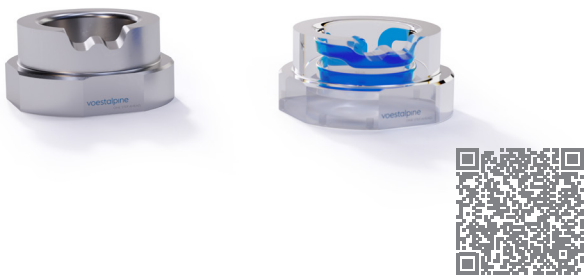
Industrial performance comparison

- » Increased lifetime
- » Reduced maintenance effort
- » Reduced fluctuations in casting quality
- » Increased flexibility

Technical data

Material	Premium Materials from BÖHLER/Uddeholm
Hardness	48 – 56 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Cooling	with or without

DISTRIBUTOR RINGS ADDITIVE



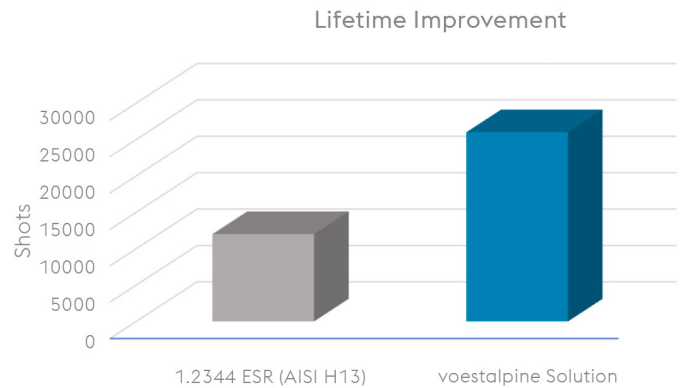
Industrial performance comparison

- » Reduced cycle time
- » Increased lifetime
- » Reduced maintenance effort
- » Reduced fluctuations in casting quality
- » Increased flexibility

Technical data

Material	Premium AM-Materials from BÖHLER/Uddeholm
Hardness	48 – 56 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Conformal cooling	customized, conformal

SPRUES CONVENTIONAL



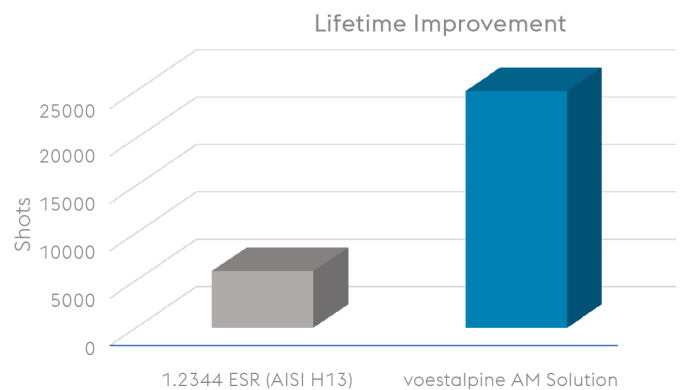
Industrial performance comparison

- » Increased lifetime
- » Reduced maintenance effort
- » Reduced fluctuations in casting quality

Technical data

Material	Premium Materials from BÖHLER/Uddeholm
Hardness	48 – 56 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Cooling	with or without

SPRUES ADDITIVE



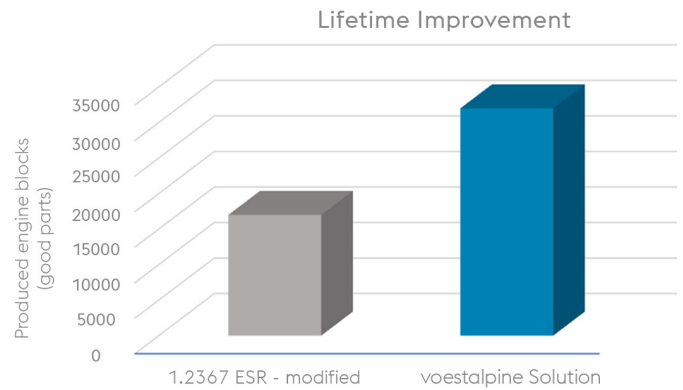
Industrial performance comparison

- » Reduced cycle time
- » Reduced scrap rate
- » Increased lifetime
- » Reduced maintenance effort
- » Reduced fluctuations in casting quality

Technical data

Material	Premium AM-Materials from BÖHLER/Uddeholm
Hardness	48-56 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Conformal cooling	customized, conformal

WATER JACKETS CONVENTIONAL



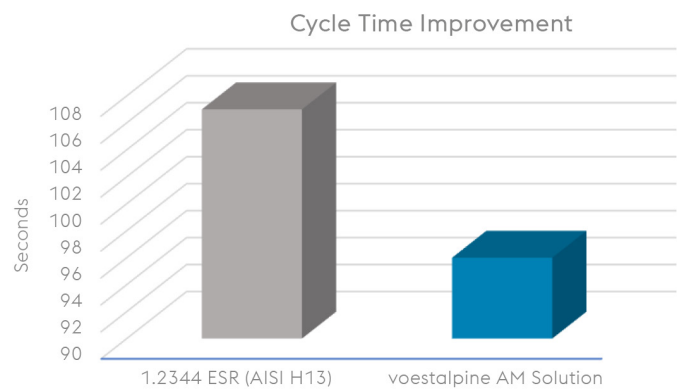
Industrial performance comparison

- » Increased lifetime
- » Reduced maintenance and cleaning effort
- » Reduced fluctuations in casting quality

Technical data

Material	Premium Materials from BÖHLER/ Uddeholm
Hardness	45 – 53 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Cooling	with or without

WATER JACKETS ADDITIVE



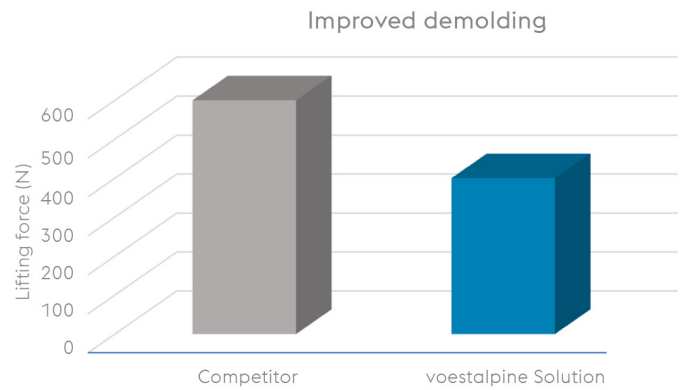
Industrial performance comparison

- » Increased lifetime
- » Reduced cycle time
- » Reduced maintenance and cleaning effort
- » Reduced fluctuations in casting quality

Technical data

Material	Premium AM-Materials from BÖHLER/ Uddeholm
Hardness	45-53 HRC
PVD-Coating	eifeler PVD-Coating
Heat Treatment	customized
Conformal cooling	customized, conformal

CHILL BLOCKS CONVENTIONAL



Industrial performance comparison

- » Patented wave design
- » Reduced maintenance and cleaning effort
- » Attractive costs compared to Cu-W blocks
- » Best venting properties (venting gap up to 1.3mm)
- » Extremely long lifetime due to outstanding high temperature wear resistance

Technical data

Material	Premium Materials from BÖHLER/Uddeholm
Hardness	up to 50 HRC
Venting type	vacuum or forced venting

SUSTAINABILITY

THE LATEST TECHNOLOGY AND NEWEST ENVIRONMENTAL STANDARDS

At our production sites – in Hagfors in Sweden and Kapfenbergas well Mürzzuschlag in Austria – 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.

Sustainable production processes and the use of the best possible environmentally friendly technologies have been an essential part of our environmental philosophy for decades.

With our integration of products, services and technical advisory we create a profound impact on our business area.



HIGHEST PRODUCTION QUALITY

As the world's leading manufacturer of tool steel, our high-performance materials are specially developed for the steel industry.

Safe, efficient production lines with minimum downtime are of great importance in the die casting industry around the world. Our state-of-the-art production processes such as protective gas electroslag remelting or powder metallurgy enable us to fulfil the highest quality standards.

Through our unique service network, we create long-lasting performance that meets the needs of our planet and future generations. We work closely with our customers on these demanding applications.

Leading by example, we enable our customers to engage in sustainable initiatives while also driving our suppliers and partners to be at the cutting edge of essential transformation processes for tomorrow.

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



Reducing **CO₂ 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 **CO₂ emissions by 25% in our supply chain** by 2029

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voestalpine

ONE STEP AHEAD.