

Doerrenberg



PART OF THE **GESCO** GROUP

Tool Steel for
Plastics Moldmaking.



Tailored Materials. **Made for people.** Developed with passion.

The reality in moldmaking: Cost pressure, time pressure, complexity.

Anyone who builds **molds, mold bases, and mold inserts for the plastics industry** knows the tension points: customer price pressure, short project timelines, more complex components, and shorter development cycles.

Three challenges that are not going away – but can be addressed with clear technical answers.



➡ Challenge 01:

Cost and margin pressure on production sites

Moldmakers compete internationally. Lower labor costs abroad intensify margin pressure. To keep pace, costs have to be reduced – while quality remains consistently high.

Where tool steel makes the difference:

Longer service life means fewer maintenance intervals, fewer tool changes, and less scrap. The right material **reduces your operating costs** – not through a lower purchase price, but through a **longer operating life**.

➡ Challenge 02:

Short project lead times

Customers expect fast delivery. Delays in moldmaking slow the production launch – and cost money. Every week counts.

Where tool steel makes the difference:

Pre-milled and heat-treated mold inserts **save time in moldmaking**. The material has already gone through key processing steps – so you can move directly into finishing.

➡ Challenge 03:

More complex components, shorter development times

Components are becoming more demanding: finer structures, higher surface requirements, and more difficult geometries. At the same time, development and testing time is getting shorter.

Where tool steel makes the difference:

The right material determines whether complex geometries are feasible at all and whether the desired surface quality can be achieved.

Sound material expertise is the key to demanding manufacturing tasks.

How we respond:

Service life, lead time, development partnership

Challenges are not going away. But they can be addressed technically. **Three approaches that show how Doerrenberg helps moldmakers in concrete terms.**

✓ Solution approach 01:

Cost reduction through extended tool service life

What it is about:

Wear-resistant materials last longer. Longer service life means less maintenance, fewer tool changes, and lower operating costs.

What Doerrenberg provides:



Technical consulting on optimal materials: wear, corrosion, polishability – we consider every dimension. The right material is not the most expensive one; it is the one that fits your application.



Optimal heat treatment: hardness and toughness have to be in the right balance – excessive hardness leads to brittleness; insufficient hardness leads to rapid wear. We identify the optimal balance for your application.



Longer service life through surface treatment: coatings reduce friction and wear. This extends service life – especially with abrasive plastics such as glass-fiber-reinforced compounds.

✓ Solution approach 02:

Reducing lead time in moldmaking

What it is about:

Time is money. Every week you can deliver your parts earlier, which gives you a competitive advantage.

What Doerrenberg provides:



Pre-milled and heat-treated mold inserts: the material has already gone through key processing steps. This saves time in moldmaking – and reduces the risk of distortion from subsequent heat treatment.



✓ Solution approach 03:

Development partnership for complex components

What it is about:

Complex components need more than good material. They need expertise.

What Doerrenberg provides:



Expert and development partner: we support you in the design of complex tools – not only as a supplier, but as a technical partner with application expertise.



Training for moldmakers: material expertise is not only something you can buy – it is something your team can build. We offer training that enables your team to make sound decisions.



Database for optimal material selection: more than 160 years of experience in structured form. Our database enables fast, well-founded material selection – based on proven applications.



All capabilities. One partner.

This is Doerrenberg.

In plastics moldmaking, the right material is only one part of the equation. What matters is whether that material is available on time, has been machined correctly, has received the right heat treatment and coating. And importantly, when questions come up, you can reach someone who understands your problem.

Doerrenberg is:

Greatest availability

From highly corrosion-resistant to wear-resistant tool steels for glass-fiber-reinforced compounds:

We cover the full spectrum and serve as your central partner.

All-in-One Provider

Technical consulting. Machining. Heat treatment. Coating.
You receive more than material –

you receive comprehensive solutions from someone who understands the industry.

The result:

With us, you have a technology partner for your entire process chain.

Why Doerrenberg?

Good reasons that matter in practice.

Tool steel is not just tool steel. We offer strong advantages you will feel in moldmaking.

- ✓ Specially developed steels for plastics moldmaking
- ✓ Highest surface qualities can be achieved
- ✓ Long service life and reduced maintenance costs
- ✓ Pre-milled mold inserts reduce lead times and distortion risks
- ✓ Resource-saving processes through longer service life
- ✓ More than 160 years of material expertise

👍 Advantage 01: Highest surface quality without rework

In plastics moldmaking, the right tool steel determines the cost efficiency, surface quality, and service life of the mold.

Doerrenberg's specially developed tool steels stand out for the highest purity, homogeneous microstructures, and excellent polishability - ideal for high-gloss visible parts, textured components, or visually demanding applications.

What this means for you:

Surfaces that do not need repolishing. Precise components from the start. Molds that deliver consistent quality across the entire production run.

👍 Advantage 02: Maximum service life with abrasive plastics

Whether glass-fiber-reinforced compounds, corrosive plastics, or high volumes: wear-resistant materials offer the optimal combination of hardness, toughness, and dimensional stability.

The result:

Extended service life. Reduced maintenance intervals. Consistently high component quality throughout the entire production run. Lower resource consumption through longer service life.

What this means for you:

Less downtime. Fewer tool changes. Lower operating costs.

👍 Advantage 03: Cost efficiency through excellent machinability

Time and cost efficiency play a central role in moldmaking. Thanks to excellent machinability, the plastics mold steels enable stable, reliable machining with reduced tool wear.

The result:

Shorter lead times. Maximum productivity. Tools that can be manufactured faster.

What this means for you:

Faster delivery to your customers. Lower manufacturing costs. Predictable quality.

👍 Advantage 04: Process reliability through heat and corrosion resistance

Optimized thermal conductivity supports short cycle times and stable production processes. For applications involving corrosive plastics or moisture-exposed environments, Doerrenberg also offers stainless solutions that provide long-term investment security.

What this means for you:

Shorter cycle times. Stable processes. Molds that still perform after years of use.

Tool steel that sets standards.
For molds that deliver more.



Technical Consulting: Material expertise that delivers.

In demanding applications, the right material is only part of success. The expertise behind it is decisive. **Doerrenberg stands for first-class tool steel and technical customer consulting** – practical, solution-oriented, and partnership-based.

- ✓ Sound material and application expertise
- ✓ Individual, project-specific consulting
- ✓ Holistic view of process and cost efficiency
- ✓ Fast, solution-oriented support
- ✓ Reliability backed by more than 160 years of experience

Consulting that begins with the application

Every mold, every application, every tool has individual requirements. Our technical experts analyze with you:

- ✓ Load scenarios (wear, corrosion, temperature)
- ✓ Production volumes (small series or mass production)
- ✓ Material stresses (abrasive or corrosive plastics, glass-fiber-reinforced)
- ✓ Surface requirements (high gloss, textured, matte)

The result:

We recommend the material that works best for you - not the one we happen to have in stock.

Material expertise meets process understanding

Whether wear, corrosive exposure, polishability for high-gloss surfaces, or fatigue – we consider and understand not only the steel, but the entire manufacturing process.

Why this matters:

A material that works in the lab does not necessarily work in production. We think process first – not data-sheet first.

The result:

Solutions that perform in practice and reduce costs over the long term.

Support along the entire value chain

Our consulting does not end with material selection.

We support you with:

- ✓ Material selection and alternative evaluations
- ✓ Heat treatment strategies
- ✓ Machining and cutting recommendations
- ✓ Failure analyses and service-life optimization
- ✓ Design of complete tools (in collaboration with partners)

The result:

Maximum transparency. Fewer risks. Predictable quality.

Partnership instead of a supplier relationship

We see ourselves as a technical partner with specialized expertise.

With fast response times, sound technical knowledge, and decades of experience, we work with you to develop sustainable solutions.

So that the best steel ...

... becomes outstanding tools.

Machining:

Complete tools from a single source.

In collaboration with experienced partners, we manufacture complete tools to customer specifications. From material selection to machining and all the way to the ready-to-install mold, we offer an integrated solution from a single source.



What this means for you:

Fewer interfaces. Clear responsibilities. Maximum process reliability – from the idea to series-ready production.

Scope of services:

- ✓ Material supply
- ✓ 2D and 3D milling
- ✓ Final contour machining
- ✓ Surface finish

Why this matters to you:

You have ONE contact for the entire process chain. No coordination issues. A partner who takes responsibility and supports you at every step.

Heat Treatment & Coating:

The decisive detail.

The right heat treatment determines service life and process reliability. We make sure your tools receive the optimal hardness for your specific application – for maximum service life and consistent quality.



Scope of services:

- ✓ Optimal heat treatment for maximum service life
- ✓ Surface treatments to reduce wear
- ✓ Coatings for abrasive plastics
- ✓ Corrosion protection for moisture-exposed environments

Why this matters to you:

Longer service life. Reduced maintenance intervals. Consistent quality throughout the entire production run.

More information:

Details about our heat treatment and coating services are available on our website: doerrenberg.com

One Team, One Sales.

Your local partner, backed by global expertise

Dörrenberg Edelstahl has stood for material expertise focused on people since 1860. Whether in Germany, the Americas, or Asia: our standard is the same everywhere – technical excellence, personal contact, and solutions that work in practice.

One Team, One Sales means: global presence with local proximity. Short paths. Fast decisions. Technical consulting that responds to your application – not to standard solutions.



What sets us apart:

Tool steel is our DNA, and material expertise is our language. People make the difference at Doerrenberg. Every component, every mold, every tool has a story – and a user who depends on it to work. That is why we always think from the user's perspective.

Well-founded, not left to chance

More than 160 years of experience means: we know the processes. We understand the challenges. That is why we continue to develop tool steel for future requirements.



Reliably available

Reliability is not negotiable. Availability determines productivity. With more than 30,000 metric tons of inventory, we ensure that material is available when you need it – without delays, without compromises.

More than material

We do not just supply steel – we support you with technical consulting, machining, heat treatment, coating, and logistics. With us, you have a reliable partner for the entire process chain.
From start to finish.

Your contact for Plastics Moldmaking.

Have questions about material selection, service life, or machining strategies?
We are here for you.

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Part of the GESCO Group

Doerrenberg is part of publicly listed GESCO SE – a leading industrial group with more than 30 market- and technology-leading companies in the capital goods industry, with focus areas in Materials Refinement & Distribution, Lifescience & Healthcare, and Industrial Assets & Infrastructure.

What this means for you:

Financial stability. Long-term partnership. Access to a network of specialists.