



Vapormatt

Medical implants

Uniform, sterile, with a superior finish –
wet blasting for medical grade implants

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The benefits of wet blasting



- Uniform, sterile, with a superior finish
- Precise control of surface roughness for best tissue growth
- Removal of burrs and surface imperfections
- Aesthetic appearance improved
- Reduced abrasive embedment
- Easier to clean
- Strengthening by peening

When you're creating medical-grade implants, your clients rely on you to provide products of exceptional quality. Whether that means offering a series of designs which can be tailored to meet a patient's – and surgeon's – requirements and ensuring every implant to leave your production line has a uniform finish, your production processes need to be clean, controlled and faultless at all times.

That's why there's no greater asset to a high-end manufacturer of medical implants than a wet blasting system.

Wet blasting allows you to create a surface with a specific and tightly controlled roughness for your medical implants, encouraging osseointegration (the direct structural and functional connection between the living bone and surface of a load-bearing implant - Branemark, 1983) in recipient patients for a better treatment outlook.

The wet blasting process allows you to finish your medical implants to a specific surface roughness, improving overall bond strength.

Unlike dry-blasting, the correct wet blasting solution dramatically reduces abrasive embedments in your product that could lead to complications. You can safely strip hard coatings without running the risk of leaving any residue or embedded material behind, meaning higher bio-compatibility and successful patient outcomes.

These improved outcomes apply to the cleaning of your products too. A metal surface with an Ra value of between 0.25 and 0.6µm is deemed necessary to meet optimum conditions for cleaning. Below 0.25µm the growth of surface bacteria multiplies, and above 0.6µm it's ideal for harbouring bacteria and contaminants. At Vapormatt, our wet blasting machines leave metal products with a surface roughness of between 0.25 and 0.6µm – perfectly designed to make cleaning an easier process.

In addition to being accurate, reliable and repeatable, the wet blasting process can also incorporate peening to strengthen your product. By removing tensile stresses and strain hardening the surface, known areas of potential weakness in the structure of the product can be eliminated.

The benefits of wet blasting medical implants at a glance

| Process | Advantage | Benefit |
|---------------------|---|---|
| Surface preparation | Wet blasting produces a very controllable, repeatable, and accurate surface preparation. | A highly uniform surface every time to the precise Ra profile required, allowing for a surface that's ideal for cleaning and is best for tissue growth. |
| Cleaning | Removes burrs, heat marks whilst dramatically reducing embedded media. | The removal of burrs and embedded media reduces the risk of complications for a patient outcome. |
| Peening | Strengthen areas of known weakness by reducing tensile stresses and strain hardening the surface. | Helps prevent failure of any part of the implant when in use. |



Why work with us?

Vapormatt isn't just the world leader in wet blasting. We invented the process and remain solely focused on it to this day.

Since Norman Ives Ashworth developed the first wet blasting machines in the 1940s, we've been developing, improving and refining wet blasting for edge radiusing, surface preparation and peening. And we're still led by the Ashworth family today, continuing to design and manufacture bespoke machinery and after-market services built to the specific requirements of your cutting tool inserts business.

Our expertise spans many different sectors: from tooling carbide insert manufacturing, to stainless steel weld cleaning. Our breadth of knowledge means we can explore a wider range of applications that benefit a business like yours.

Because at Vapormatt, while we might be pioneers of wet blasting technology, we never believe the job is done. We're constantly researching, developing our techniques and discovering new technological enhancements that we can apply to cutting tool inserts. Consequently, we hold and have patent applications pending in significant areas of process control and repeatability.

When working with you, we'll build a long-term technical partnership, giving you access to our know-how and world-leading wet blasting services. As a result, we understand you may need us to develop methods and processes in confidence. You'll benefit from our discretion too – in fact, we have a long track record of doing just that with our key customers across a number of high-tech sectors.

What you can expect of us?

- **Integrity** - We always conduct business with you in a confidential, honest, open and ethical manner
- **Commitment** - Every member of our team aims to exceed your expectations at every level
- **Innovation** - We're at the forefront of wet blasting technology, implementing our technical expertise
- **Value** - You gain value from us through our high levels of service and technical excellence
- **Collaboration** - As a customer focused company, we work collaboratively to ensure you enjoy the best possible experience

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The Vapormatt Promise

In designing and manufacturing specialist machines that meet your exact requirements, we're always improving. Always refining. Always pushing the boundaries. We build on the successes of the past, incorporating proven designs and approaches, and combine them with innovative thinking to meet the specific challenges we face together with you.

Throughout that collaborative process, we're also completely honest and discreet. And it's in this respect that we make a promise to you.

As we develop more efficient, more seamless and more effective ways to deliver the benefits of wet blasting to you, any off-the-shelf solution is unlikely to be suitable. So complete validation of every design detail is practically impossible, and some functions – software, for example – will inevitably need modification as they're integrated into your processes.

Equally, once the equipment is installed on your premises, things are unlikely to be up and running without a glitch from the first moment, in a plug-and-play manner. Performance will always improve as operators and maintenance teams become familiar with the machines and their operation.

Other manufacturers might shy away from such an honest admission. However, we accept that this is simply part of building and refining the right wet blasting machines for you. That's why we promise to make the entire Vapormatt team, including our engineers, designers and sales specialists, available to offer advice, guidance and practical assistance once the equipment is installed and integrated in your workplace.

And we won't be satisfied until it's working to its full potential and this promise is kept.

The four pillars of our promise:

- To continuously improve the design and manufacture of our equipment
- To provide you with machines of the highest possible quality
- To support you in achieving optimal performance from your machines
- To collaborate with honesty and discretion