



SPOTLIGHT

Restoring steel with a gentle touch: why bristle blasting is a smart alternative for grit blasting before coating

JF (Frits) Doddema,

Monti Group – Hennef, Germany - frits.doddema@montipower.com



Monti Group has spent decades pioneering a surface preparation method that is comparable to conventional 'sand' blasting: the Bristle Blaster®. Today, it is the only power tool-based technology in the world that achieves visual cleanliness and an uniform anchor profile comparable to loose abrasive blasting, without the operational complexity and environmental challenges that come with loose media such as grit.

Why surface preparation matters so much

Before diving into what sets the Bristle Blaster® apart, it is worth re-emphasizing a universal truth: coating performance is only as good as the substrate preparation. Even the highest-grade epoxy, polyurethane, or anti-fouling system will fail prematurely if applied over poorly prepared steel. This is particularly true in coastal outdoor areas where steel is constantly under attack - from saltwater, UV radiation, cargo residues, and changing humidity. Traditionally, grit blasting has been seen as the gold standard for removing corrosion and old coatings. But is it always the best - or even the most practical - option? Monti Power believes the answer is often "no." The following explains why.

The problem with traditional blasting methods

Loose abrasive media blasting requires infrastructure: compressors, hoses, containment systems, recovery equipment, and highly trained operators. On a dry dock, that might be manageable. But when vessel is at anchor, on a voyage, or docked in a port with environmental restrictions, grit blasting becomes a logistical headache - and sometimes entirely prohibited. Moreover, grit blasting generates enormous volumes of waste - spent abrasive, old coatings, rust, and often contaminated dust. This not only poses environmental challenges but also raises disposal costs and can delay maintenance.

In the world of asset integrity and steel maintenance, time is money - and surface preparation is everything. Whether you're a superintendent overseeing dry-dock schedules, a ship captain responsible for operational uptime, a corrosion engineer aiming for maximum longevity, or a maintenance engineer tasked with rust removal, you understand how critical it is to prepare steel surfaces the right way.

The patented Bristle Blaster® is the only power tool in the world that is comparable to ISO 8501-1 Sa2½ to Sa3 visual cleanliness and generates a surface roughness/profile from 50 µm, ideal and crucial for bonding a coating and adhesives.



Then there is the issue of surface accessibility. Tight corners, vertical bulkheads, flange edges, ballast tanks, or container undersides are not always accessible with large blasting equipment. Crews need a more mobile, controllable, and precise solution.

The Bristle Blaster® advantage: blasting without grit

The patented Bristle Blaster® bridges the performance of grit blasting with the practicality of hand tools. It is the only power tool in the world that is comparable to ISO 8501-1 Sa 2½ to Sa 3 visual cleanliness and generates a surface roughness/profile from 50 µm - ideal and crucial for bonding a coating and adhesives.

Here is how it works: the tool features specially hardened bristle tips that rotate at high speed and are dynamically tuned to strike the steel surface at an optimal angle. The result is simultaneous corrosion removal and micro-anchoring, all in one step - without the need for blasting media or secondary clean-up.

Let us break down the real-world benefits:

1. Mobility and accessibility

From ballast tanks to deck edges to inside of containers, the Bristle Blaster® allows crew or maintenance contractor to access confined or vertical spaces where blasting rigs simply cannot reach. Whether you are working at sea, on deck, or in port, Monti Group's compact tools operate reliably from a power outlet or pneumatic source - no compressors or containment tents needed.

2. Environmental stewardship

Whether it is captains or superintendents, everyone knows how strict port regulations have become. Many jurisdictions now restrict or ban abrasive blasting unless fully enclosed systems are used. The Bristle Blaster® produces no abrasive waste, no airborne media, and minimal dust, making it ideal for environmentally sensitive locations or in-transit maintenance, and the bristles remain clean.



Monti Group's compact tools operate reliably from a power outlet or pneumatic source, at sea, on deck, or in port – no compressors or containment tents required.

3. Lower cost and faster deployment

Grit blasting setups can take hours to assemble and require multiple operators and cleanup crews. In contrast, the Bristle Blaster® is plug-and-play, allowing rapid mobilization and deployment - even during a port call or cargo turnaround. This drastically reduces labour, consumables, and downtime costs.

4. Verified coating compatibility

Surface profile has been validated by leading coating manufacturers across the marine and offshore sector. Monti Group routinely tests Bristle Blaster® surfaces with coating partners and independent laboratories to verify pull-off adhesion, edge retention, and long-term corrosion resistance. In some cases, coatings have performed better on bristle blasted surfaces due to cleaner, sharper anchor patterns with fewer contaminants and therefore immediate flash-rust risk.

5. Safety and control

Grit blasting is inherently hazardous - flying media, pressurized hoses, visibility issues, and confined space risks. The Bristle Blaster® offers a controlled, operator-friendly alternative that significantly reduces noise, dust, and risk of injury. It is also safer for surrounding crew and equipment, especially on active vessels.

Use cases from the field

Bristle Blaster® has been used across all classes of vessels: bulkers, tankers, offshore platforms, ferries, and container ships. One major liner operator recently used it during a mid-voyage coating spot repair on deck fittings - saving a planned dry-dock intervention.

In another case, a container leasing company deployed Bristle Blasters across its global refurbishment hubs, drastically cutting abrasive consumption and enabling local teams to work without permits or special waste disposal.

Closing thoughts: future-proofing a maintenance strategy

The maritime industry is evolving under increasing pressure: environmental regulations, tighter schedules, and aging fleets demand agile, efficient, and sustainable maintenance tools. The Bristle Blaster® is not here to replace grit blasting in every case, but to give a valuable and certified alternative - one that is cleaner, more precise, and better suited to modern marine operations. "In Monti Group we are committed to solving real-world maintenance challenges for real-world people. We work with your coating suppliers, your technical managers, your shipyards, and your classification bodies to ensure every application of our technology meets the highest performance standards. If you have not experienced the Bristle Blaster® yet, we encourage you to try it. Because in the end, what matters is not just cleaning steel - it is preserving value, reducing downtime, and extending asset life. That is what we are here for," concludes the company. 📌

The Bristle Blaster® is not here to replace grit blasting in every case, but to give a valuable and certified alternative - one that is cleaner, more precise, and better suited to modern marine operations.

Bristle Blaster® Set.

