

When Bad Priming Happens to Good Steel: The Case for Abrasive Blasting

It happens more often than you'd think: A contractor receives steel for a job, only to find that it was prepped and primed below spec. The steel fabricator—often located hundreds of miles away—may have skipped critical surface preparation steps or used a fast-dry shop primer meant only for temporary protection. Once the steel is delivered and installed, the issue isn't noticed until an inspector arrives and finds corrosion, peeling primer, or surface defects.

By this stage, options are limited and expensive. The steel may require power tool cleaning, re-priming, or even complete coating removal for off-site blasting and recoating. The result? Project delays and increased costs. At that point, asset owners may feel forced to accept subpar steel to keep the project on schedule, which sets the stage for premature coating failure and ongoing maintenance headaches.

So how do you prevent this nightmare scenario? Proper abrasive blasting from the start.

Why Abrasive Blasting Matters

Abrasive blasting, when done correctly, ensures a clean, properly textured surface that promotes strong primer adhesion. Whether you're dealing with steel or architectural concrete, blasting removes contaminants, mill scale, rust, and old coatings. It creates the right profile for long-lasting protection.

For steel structures, there are clear guidelines on blast cleaning levels:

- SSPC-SP 3 (Power Tool Cleaning): Removes loose contaminants but is insufficient for high-performance coatings.
- SSPC-SP 6 / NACE No.3 (Commercial Blast Cleaning): The most common specified level, it removes nearly all rust, mill scale, and coatings.
- SSPC-SP 10 / NACE No.2 (Near-White Blast Cleaning): A step above SP 6, it offers superior adhesion for high-performance coatings.
- SSPC-SP 5 / NACE No.1 (White Metal Blast Cleaning): The highest standard, which is used for extreme environments where maximum surface cleanliness is required.

Blasting isn't just for steel. For concrete, abrasive blasting plays a crucial role in removing contaminants, achieving a uniform finish, and ensuring coatings or sealers adhere properly.

Prevention Starts at the Source

To avoid costly rework situations with both steel and concrete, contractors and inspectors should:

1. Specify the right surface preparation. Make sure the project specs align across sections. If steel will be top-coated, require SSPC-SP 6 or better.
2. Verify compliance before shipping. If possible, have a paint inspector review the steel at the fabrication shop to confirm proper blasting and priming before it ships.
3. Enforce inspection at arrival. Always inspect steel deliveries for proper surface prep and primer quality. Reject non-compliant shipments before they create bigger issues.
4. Use the right equipment and techniques. Whether you're working with steel or concrete, train workers in abrasive blasting best practices, including proper nozzle angles, pressures, and abrasive media selection.

Don't Skip the Wet Blast Option

When job conditions are too challenging for traditional abrasive blasting—such as in enclosed spaces or strict air-quality zones—consider wet blasting. A wet blast head attachment reduces dust while still achieving a proper surface profile. It's a practical alternative that maintains surface integrity while minimizing environmental impact.

Bad priming is more than an inconvenience. It's a costly, time-consuming problem that can lead to premature coating failures. Use proper abrasive blasting from the start, so you ensure coatings perform as expected. It'll save time, money, and reputation in the long run.