TECHNICAL BULLETIN

07/2026

Grit Abrasives in Wheel Blast Machines

Understanding Performance, Wear and Surface Quality

There is ongoing discussion within the surface preparation industry regarding the use of angular abrasives (Grit) versus round abrasives (Shot) in wheel blast machines. Users unfamiliar with grit abrasives are often cautious initially, particularly concerning the potential impact on equipment wear.

A common question is: **Does the use of grit increase wear on wheel blast equipment compared with shot abrasives?**

The answer depends on several important factors, especially abrasive hardness.

Abrasive Hardness and Machine Wear

Wear on blasting equipment is influenced by the hardness of the abrasive media, **regardless of whether the abrasive is round or angular.**
Ervin manufactures both shot and grit abrasives in multiple hardness grades to suit different blasting applications. While very hard grit grades are typically recommended for compressed air blasting applications, softer grit abrasives have been specifically developed for wheel blast machines.

These softer grit grades offer hardness levels comparable to standard shot abrasives while delivering improved blasting performance and surface preparation characteristics. The three images above right show the different optical appearance after 500 cycles in blasting operation.

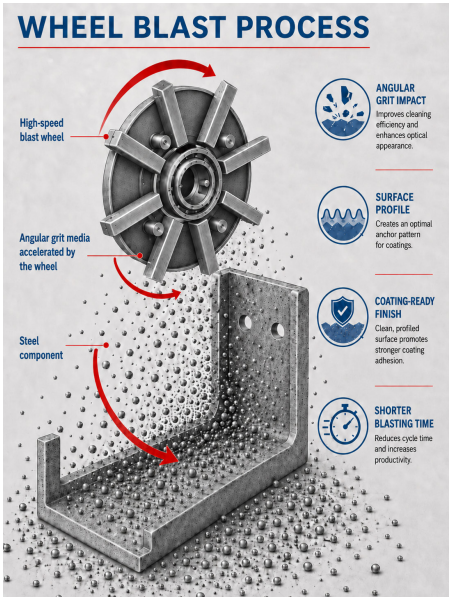
Evaluating Wear Correctly

When evaluating equipment wear, it is important not to focus solely on the lifetime of wear parts. A more accurate assessment considers the relation between lifetime and number of workpieces blasted. In addition, the re-blasting rate and reduced energy costs should be considered.
A useful comparison is paint consumption. Two different paints cannot be compared purely on price per litre, the coverage per square metre must also be considered. The same principle applies to blasting abrasives.



Amasteel Shot, Amasteel MG Grit and Amasteel HG Grit after 500 blasting cycles

Many users worldwide report that when blasting performance is measured against wear part life, grit abrasives actually reduce overall equipment wear due to increased efficiency and reduced processing times.



Additional Benefits of Grit Abrasives

In addition to productivity advantages, grit abrasives can provide several process and quality improvements:

- Improved surface roughness profiles for coating applications
- Higher coating adhesion
- Reduced component warpage on thin-walled parts
- Potential reduction in edge corrosion
- Improved visual appearance
- Faster cleaning speed
- Reduced overall blasting costs

Cleaning Performance Comparison



The images illustrate the difference in cleaning performance between Amasteel LG50 Grit and S170 low carbon shot. Steel components blasted under the same conditions for 1 minute each.

TECHNICAL BULLETIN

07/2026

Grit Abrasives in Wheel Blast Machines

Surface Appearance Comparison

Blasted and coated surfaces can display noticeably different visual characteristics depending on the abrasive used. The example images on the right show two identically blasted and painted plates: left side blasted with S460 Shot, right side with MG25 Grit.



S460 Shot



MG25 Grit

Selecting the Correct Abrasive

Soft and medium-hard grit abrasives are highly suitable for wheel blast machines and are widely used across multiple industries. Harder grit grades may also be effective in heavy-duty applications, such as forge scale removal, although suitability should be assessed case by case according to operating conditions and equipment configuration.
Round shot abrasives continue to offer advantages in applications requiring

- Higher rebound effect
- Peening performance

Shot and Grit Mixtures

In foundry cleaning operations, mixtures of shot and grit have become increasingly popular to optimise both cleaning efficiency and surface finish quality.

The images below show wear part results from a field trial in a foundry between Amasteel Mix of Shot & MG Grit against low carbon Shot. The control cage and Impeller are made of tool steel. As there was not a big difference in the wear after 800 blasting hours, the customer decided to stay with the Amasteel Shot/Grit Mix because of the faster and better cleaning results of the castings.

Industry Acceptance

Leading global manufacturers of wheel blast equipment support the use of both shot and grit abrasives within their systems, backed by thousands of successful industrial references worldwide.

- **Lars Südfels, VP OEM Sales Wheel at** wheelabrator, says:

“We design our equipment to support both round and angular blast media, so customers can fine-tune their process to their exact needs. Our test center helps customers around the world do just that: running tests to find the best combination of process parameters and allow real speed wear comparisons. Plus, our R&D is constantly improving the wear performance of parts, whatever media you choose.”

- **Matej Koglot, Managing Director at** gostoltst, **adds:**

"It is true that some of our customers have discovered that medium hard grit offers certain advantages in wheel blast applications. We are pleased that our blasting machines are designed to operate with both grit and shot. However, it is important to emphasize that the harder the Grit or Shot product is selected, also the machine wear goes up.
These costs can often be covered with quicker blasting time and cleaning more workpieces, but it is the responsibility of each customer to measure and evaluate this balance individually. As the manufacturer, we also need to be informed in advance about the customer’s decision regarding which abrasive will be used.”



Wear part comparison between Amasteel Shot/Grit-Mix and Low Carbon Shot in a Foundry