

Optimise Your Blasting – 1. What is an Abrasive Blast System?

When it comes to dry abrasive blasting, the efficiency of your blasting setup is often measured by how much area you can cover in a given time, and the amount of abrasive you use to do it.

In this video series we will be showing you how you can optimise your blasting setup to save time and dramatically reduce the overall cost of your job, without sacrificing quality or safety.

To do that, we will cover what an abrasive blast system is and what it is trying to do, discover the variables that affect the efficiency of your blasting process, how to reduce dynamic pressure losses, explore the difference between air pressure and air flow and how it affects your blasting setup; and show how changing your setup can dramatically affect the overall cost of your job, as well as how we've proved it.

Today, we're starting at the beginning – what is an abrasive blast system, and what is it trying to achieve?

A typical, basic blast system includes an air compressor (often with a built-in air dryer), which feeds air, sometimes via an Air Distribution Manifold, to an Abrasive Blast Machine, where the high pressure air is mixed with the abrasive media, with the amount of abrasive added to the air controlled by the media valve.

The mix of air and abrasive then travels along the blast hose, and out of the nozzle at the end, hitting the surface being blasted, creating a surface profile for painting, removing any rust or existing coatings in the process.

When the air and abrasive mix, the high pressure air provides the abrasive with energy of movement, also known as kinetic energy, and the more energy of movement your abrasive has, the more severely it will impact the surface you're blasting, allowing you to complete the job in less time, using less abrasive. In other words, the more kinetic energy your abrasive has, the more efficient your blast.

So how do we give our abrasive more kinetic energy?

Well, the amount of kinetic energy the grit carries is dependent on two things; the mass and speed of the grit. The mass is defined by the size and weight of the abrasive you are blasting with, while the speed is created by the inlet pressure at the blast nozzle. Typically the higher the pressure at the nozzle, the faster your abrasive will travel. Getting the best pressure at the nozzle, is defined entirely by how you've specified your blast system.

So, that's what an abrasive blast system is, and what it's trying to do. Next time we will be discussing the variables that affect the efficiency of your blasting process, including the effects of dynamic pressure loss, so we can start optimising your blast system.

For more information on the Elcometer Blast Machines, Valves, ancillary equipment, Personal Protection Equipment, and our complete range of spare and replacement parts – simply visit elcometer.com, or click on one of the links on-screen.

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