

What is shot blasting?



Dirty, oxidized or otherwise unfinished material is undesirable for a number of reasons. Materials covered with rolling chips, dirt, and other debris are often unsightly. Oxidized materials can cause problems during manufacturing, such as welding or machining. Applying the coating to an unclean material can result in a lack of adhesion. Sharp burrs and edges can cause tears. For these reasons and more, materials often require cleaning prior to many different types of manufacturing processes. While methods range from simply wiping the metal with a rag to immersing the material in a complex bath of chemical combinations, one of the most effective and popular methods of cleaning soiled or oxidized materials is by shot peening them.

[What is shot blasting?](#)

Shot peening is a mechanical cleaning process that uses spheres of material to remove oxides and other debris from the surface of another material. While not as often mentioned as sandblasting, shot blasting belongs to the same family of sandblasting processes in which sandblasting is classified. The main difference between shot blasting and sand blasting is that shot blasting uses spherical shot blasting as the grinding medium and is propelled using a centrifugal wheel, whereas sand blasting uses sand particles and is propelled

almost entirely with compressed air.

How does shot blasting work?

Shot blasting removes contaminants from the surface and improves its finish by pushing a circular material called a blasting medium against the surface. What type of blasting media to use is a very important decision for the blasting process. The size and hardness of the peening material will determine the amount of surface removal of the material being cleaned. The type of material being cleaned will also affect the effectiveness of shot blasting. In general, the shot peening material and size will be selected according to the composition of the material whose surface is shot peened.

Another important part of the blasting process is the method of advancement and the final velocity of the blasted material. The most common method of propelling blasting media is to use a centrifugal wheel. To propel the blasting medium, it is unloaded into a centrifugal wheel. Once the blast material is accelerated by the wheels to the desired speed, it is expelled from the wheels and into the blast gun. The operator or machine hand-held blast gun then directs the flow of blast media to clean the surface of the material.

Many blast equipment units also include a recovery system. A blast recovery system will collect the shot that has been propelled and hit the material being cleaned and return it to the propelling unit for reuse. Shot peening recovery is usually carried out by using a vacuum.