# CHOOSING THE RIGHT ABRASIVE

EXAMPLES, TIPS & TRICKS

The following characteristics will affect your results and should be considered when choosing an abrasive.

Abrasive Shape

Basically, there are two different shapes: angular which has sharp edges, and round with no edges.

Angular media has sharp edges that cut into the substrate, leaving an anchor profile for the new finish to stick to.
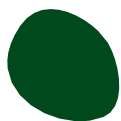
Round media is mainly used for cleaning or stripping while leaving the surface smooth. It will not rough up the surface or leave an anchor profile.

Abrasive Size

During production, most abrasives get shaken through various screens to determine their mesh size.

MESH SIZE	LOOKS LIKE
20/40	
40/70	
60/100	

Larger abrasives are slightly more aggressive than smaller/ finer abrasives. However, if you're trying to finish a job faster, you'll see better results when you increase the abrasive density, not size.

Abrasive Density

Dense particles impact with more energy over a smaller surface area, resulting in a deeper profile. The heavier the media, the more impact it has on the surface you are blasting.

Imagine a golf ball and a ping pong ball. They are the same shape and size, but the golf ball is denser. If you threw them at someone, the golf ball would hurt a lot more! Similarly, a dense particle will have more impact.

Abrasive Hardness

Generally, the harder the particle, the deeper the profile it will impart.

Softer abrasives, like organic materials and plastics, are good for removing dirt, oil, grease and paint without creating a profile.

Comparison Chart

ABRASIVE TYPE	BULK DENSITY	HARDNESS (MOHS SCALE)	SHAPE
Crushed Glass	75 lb/ft^3	6	Angular
Blast Sand	100 lb/ft^3	7	Angular
Garnet	145 lb/ft^3	7–7.5	Angular
Glass Bead	75 lb/ft^3	6	Round
Walnut Shell	35 lb/ft^3	3	Angular
Soda Bicarbonate	61 lb/ft^3	2.5	Angular
Sugar Sand	100 lb/ft^3	6–7	Round
Plastic	50 lb/ft^3	3–4	Round
Coal Slag	85 lb/ft^3	6–7	Angular

Graffiti on Brick Wall

Photo credit: Dan Danslister

Customer Expectations:

The customer wants the graffiti removed from this wall, located in a residential area.

BLAST WET WITH 40/70 GLASS

Why choose that abrasive?

You can use an angular abrasive because brick is already rough, and you won't affect the texture of the surface.

Crushed glass is a perfect choice for brick. It shatters on impact, so it gets into the small nooks and crannies.

EXTRA TIP: Stay away from soda on brick. It can cause a chemical reaction on masonry, which creates a white film. Also, you don't want to use soda in a residential area because it could kill nearby vegetation.

Etching Granite

HAROLD T. BARTELL
LIEUTENANT COLONEL
QUARTERMASTER CORPS
UNITED STATES ARMY
JANUARY 18, 1933 – FEBRUARY 5, 1996

Photo credit: Pixabay

Customer Expectations:

The customer wants to etch words into a granite headstone.

BLAST WET WITH 40/70 GLASS

Why choose that abrasive?

For etching, opt for an angular abrasive that will cut into the substrate effectively. You'll also want to choose a dense abrasive. A denser abrasive allows you to make fewer passes over the surface, reducing the risk of your stencil moving or shifting, which could ruin the image.

EXTRA TIP: If crushed glass isn't cutting fast enough, try mixing in some garnet. It's a dense abrasive that provides extra cutting power.

Need a stencil? Contact a local sign shop —they can make one from vinyl, which adheres well to substrates like wood, granite, and concrete.

Aluminum Gasket Molds

Photo credit: Kent Pendleton

Customer Expectations:
The customer wants you to remove rust from these gasket molds, without leaving any anchor profile. It's imperative to leave a very smooth surface so the gaskets will release from the molds.

**BLAST DRY WITH
SODA**

Why choose that abrasive?

Something fine and round would be an excellent choice for this task. In the example to the left, the contractor initially tried fine glass bead, but it still left a slight etch on the surface.

He then switched to dry blasting with soda, a very soft abrasive. This left a smooth, clean finish on the aluminum.

EXTRA TIP: Soda was traditionally used for dry blasting only, but ask your abrasive supplier about a new type of soda designed for wet blasting!

Large Concrete Surface

Photo credit: Greg Hopper

Customer Expectations:
The customer wants all the paint removed from this 8,000 square foot surface. It will not be repainted.

**BLAST WET WITH
40/70 GLASS**

Why choose that abrasive?

Since concrete already has a textured surface, an angular abrasive is a good choice. Roughing up the surface further won't make much of a difference.

Given the larger area to cover, it's best to choose the most cost-effective abrasive available.
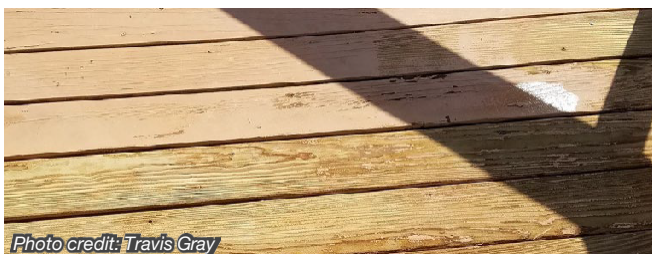
EXTRA TIP: To increase your production rate and finish the job faster, use an XL nozzle or fan nozzle. These items are available in our online store - store.dustlessblasting.com.

Stain on Wood

Photo credit: Travis Gray

Customer Expectations:

The customer wants the layers of paint and stain removed from this wood deck.

BLAST DRY WITH CORN COB

Why choose that abrasive?

Corn cob is a soft, gentle abrasive that effectively removes paint and stain without damaging the wood surface. It's the ideal choice for delicate surfaces like wood, ensuring that the deck retains its natural texture while getting a clean, smooth surface.

Wet blasting isn't recommending for this job, as moisture can cause the wood to swell, potentially leading to unwanted damage or an uneven finish.

EXTRA TIP: For a soft substrate like wood, increase your standoff distance and make sure to always keep the nozzle moving. This will avoid profiling the surface.

Pool Tile Cleaning

Photo credit: Dan Danslister

Customer Expectations:

The customer wants the calcium deposits cleaned off the water line in their pool. The pool is in his backyard.

BLAST DRY WITH MAXXSTRIP

Why choose that abrasive?

Also known as Kieserite, this abrasive is a soft, water-soluble abrasive and is ideal for pool projects as it works effectively without damaging the pool's delicate tiles.

The neutral pH of the abrasive makes it the perfect choice for removing stubborn calcium buildup while being safe for both the pool surface and the surrounding environment.

EXTRA TIP: Avoid using an angled, dense abrasive for this application, as the customer does not need an anchor profile for repainting.

OTHER CONSIDERATIONS

Customer Expectations

The first step is to understand your customer's expectations and the intended use of the piece after it's been blasted. Here are some key questions to ask:

- Is the piece going to be painted or re-coated? If so, you'll want to use an angular abrasive that creates an anchor profile for the new paint to adhere to.

- Is the piece just being cleaned without repainting? In this case, use a round abrasive that won't damage the substrate and will leave a smooth finish.

- Are there intricate details involved? When blasting an ornate or delicate antique, use a soft or round abrasive to avoid eroding fine details.

- Does the customer know what kind of finish they want? In some cases, it's not necessary to completely remove a coating, especially if the surface will be repainted.

Finishes You Can Achieve

1) Brush Blast

This method removes loose paint or flaking finishes to prepare the surface for a new topcoat, typically for aesthetic purposes.

2) Commercial Blast

This is taking nearly all the top finish away, leaving whatever may be stuck in cracks or crevices that wouldn't cause a new finish to fail anyway. Like cinderblock buildings, line stripes that are going back down in the same spot, etc.

3) Near White

In this process, all finish is removed, leaving behind some mill scale or another part of the substrate material.

4) White Metal

This method completely removes all paint and finishes, exposing a uniform white metal surface. This is typically used for car restorations or substrates that are being re-coated using special processes like electrolysis.

Setting Expectations

Always discuss the job with your customer and set clear expectations about the finish you'll be providing. Agree on the finish and choose the appropriate abrasive and pricing accordingly.

For example, there's no reason to blast a dumpster the same way you would a car, especially if the paint will be worn down in a week. Similarly, there's no need to take a commercial truck frame all the way down to white metal if the goal is simply to make it look new for resale.

If your customer understands the various finish levels available and you price based on that, everyone will be on the same page—and you can't lose.