Product Bulletin

September/October 2011

For Blasting and Painting Specialists

BLAST ONE®
Tomorrow's blasting technology today

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Could YOU win more jobs if you used a Blasting Abrasive that can drop costs by a staggering 39% overnight?

- **Cut Abrasive Consumption by 66% (or more!)**
- **Increase Blasting Speed by up to 43%**

If you are still using a dusty black abrasive that is cheap to buy, ask for a demonstration of SpeedBlast. You will be amazed.

Some of your competitors have already found out one of this industry's best kept secrets: using Blast-One SpeedBlast™ in a High Performance Blasting System is so efficient, it can allow you to provide lower quotes on jobs, or get more profit on your projects!

Lets put that another way, this system and abrasive can be like having an extra blasting unit and operator for two days a week, FREE! It is very effective!

Blast-One SpeedBlast™ is a very neighborly abrasive. You can blast cleaner with a lot less dust and use a lot less (much less to clean up and dispose of).

Blast-One SpeedBlast™ is a pure natural mineral which is completely inert and silica free.

CALL US NOW TO REQUEST AN ON-SITE DEMONSTRATION

1-877-7 BLAST1
(1-877-725-2781)

Blasting with Blast-One SpeedBlast™ is faster, cleaner and lot more neighborly.

Clean Surfaces to 'White Metal' with Blast-One SpeedBlast™

Blast-One SpeedBlast™ does not shatter and leave embedment in the steel like slag abrasives. For a true white metal blast, without soluble chloride salts, ready to put high quality coatings onto, you must insist on Blast-One SpeedBlast™.

Blasting with Blast-One SpeedBlast™ on right and Blasting with Coal Slag on left. Note the embedment levels found on this simple test.

SpeedBlast™ Cleanliness

Blast-One SpeedBlast™ is washed in spring water to ensure it is clean of all impurities. **Caution: some abrasives from third world countries contain silt, clay and other impurities.**

Do your own shake test with clean water to ensure you have clean abrasive. Dirty abrasive is dusty, contaminates the steel and may cause coating failure.

Dirty Indian abrasive. Some batches of Indian abrasive have 13% silt!

Pure Blast-One SpeedBlast™

The shake test is a simple check for contaminated abrasive. The muddy water (on the left) indicates silt or clay is mixed with the new abrasive! This is common with some abrasives.

Lower Dust Blasting?

Yes, it's possible if you use pure natural Blast-One Premium SpeedBlast™!

A lot of the dust from abrasive blasting comes from the abrasive impacting into the steel at high speed and smashing into smithereens.

Blast-One SpeedBlast™ is low dusting because each grain is extremely tough. Each gemstone grain is weathered by thousands of years of erosion from the mother-rock, down rivers, creeks and streams — then "sandblasted" by high winds and blown up into dunes. The surviving grains are the toughest and most durable.

This means on impact (when blasting) Blast-One SpeedBlast™ doesn't break down like many others. This is why it is very low dust blasting.

You can see a lot better, work cleaner and it's a lot more neighborly!

And if you can collect it, Blast-One SpeedBlast™ can be recycled up to 10 times over.

Blast-One SpeedBlast™ is used on many major projects around the USA.

Conventional abrasives can create excess dust.

Blasting with Blast-One SpeedBlast™ is clean and fast!

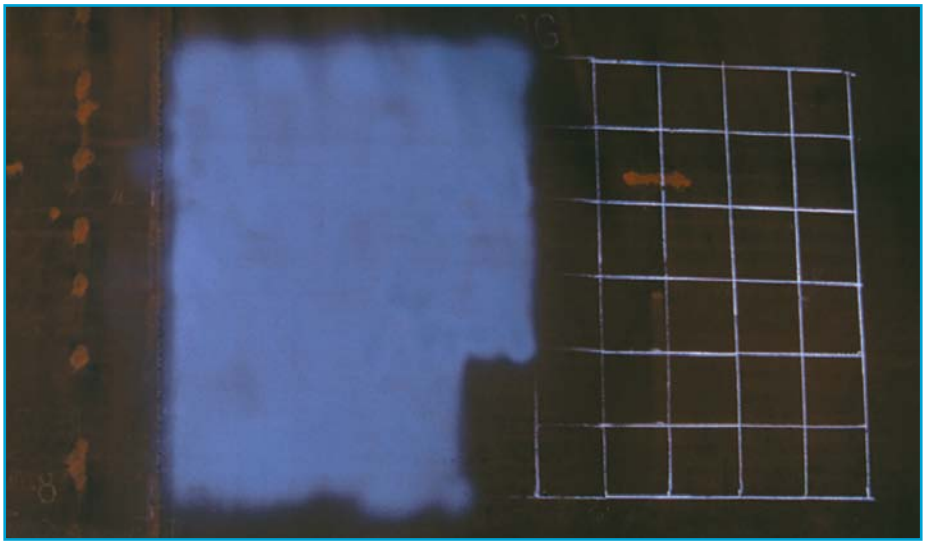
Can you Blast Faster by using SpeedBlast™?

Each gemstone grain of high density Blast-One SpeedBlast™ carries a lot of energy.

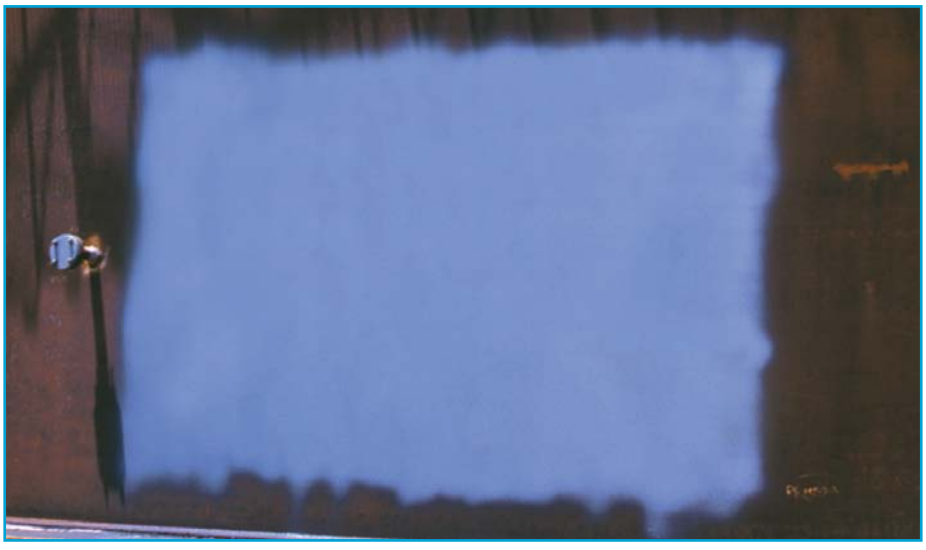
When thousands of grains rip into a surface, it really blasts fast. You can move the nozzle faster and get more work done and finish sooner!

Blast-One SpeedBlast™ has a unique size blend which is ideal for removing rust and coatings, as well as cleaning out the micropores of the steel surface.

Blasting with SpeedBlast™ gives you a white metal finish – **fast**.



15 minutes blasting with coal slag: 28ft² blasted – 300 lbs used.



15 minutes blasting with Blast-One SpeedBlast™: 60ft² blasted – 125 lbs used. Amazing!

Every Grain is a Completely Inert Gem!

Every grain of Blast-One SpeedBlast™ is a tiny gemstone – the same garnet prized for centuries for its beauty and durability. The photomicrograph *(below)* shows the pure, naturally toughened grains of almandine SpeedBlast™ garnet.

Blast-One SpeedBlast™ is perfectly sized for a broad range of jobs – coarse enough to give the profile you **need** and fine enough to give the productivity you **deserve**!

Magnified Blast-One SpeedBlast™ gemstone grains.

Blast-One SpeedBlast™ Garnet – nature's pure abrasive

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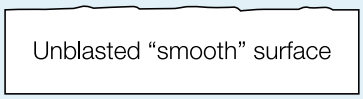
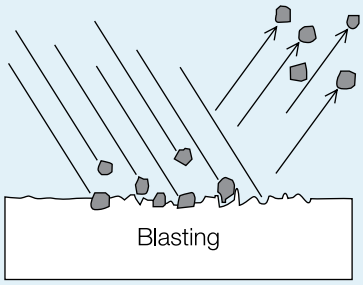
Surface Profile – A Critical Element of Surface Preparation

Understanding Surface Profile





In the blast cleaning process, grains of abrasive are propelled with great force and energy at the work surface. Upon impact, the grains ‘dig’ into and then rebound out off the surface leaving a rugged, miniature ‘mountain-and-valley’ finish.

This surface roughness/etch/texture is the surface profile.

Surface profile is critical to coating performance by:

1) **increasing the surface area**
2) **providing a ‘key/tooth/anchor pattern’ for the coating to lock and adhere to.**

The difference between Surface Profile and Class of Blast

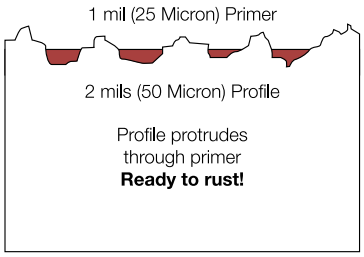
Surface profile is concerned with the ‘shape’ of the surface finish (and measuring the size of the ‘shape’ created) whereas Class of Blast is concerned with ‘cleanliness’ of the surface finish. (Putting it another way – Class of Blast is determining to what degree the rust, paint and other contaminants have been removed).

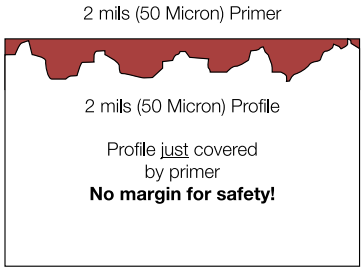
Both the Profile and the Class of Blast are important features of the surface finish and need to be separately specified in preparing a blast cleaned steel surface.

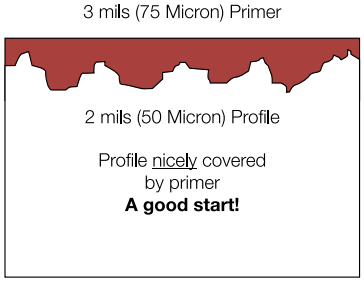
The Pitfalls of Surface Profile

Excess Profile – While an absence of profile can be detrimental to coating adhesion, it can be equally disastrous to have an excessive profile height causing premature rusting and coating failure. In addition more profile means using more paint to cover the surface!

Consider these cases…







Rule of Thumb #1:

Profile height should not exceed the primer coat DFT (Dry Film Thickness).

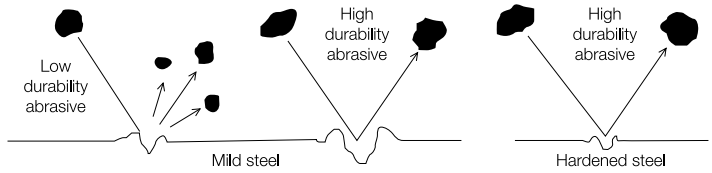
Rule of Thumb #2:

Profile height should not exceed ⅓ the total coating system DFT.

Embedment – Embedment of abrasive particles in the surface is a threat posed by friable, irregular shape abrasives. The embedded particle or fragment can stand out as a ‘rogue’ peak above the surrounding profile and may protrude through the applied coating.

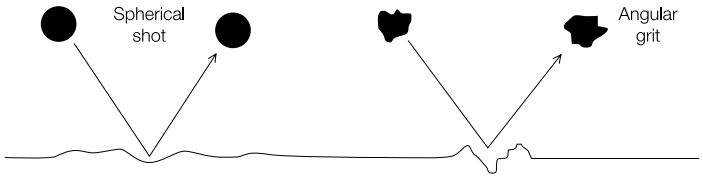
Factors which have an Effect on Surface Profile

Abrasive Durability – Surface Hardness e.g. Bicarb media vs Alox, Mild Steel vs Hardened Steel



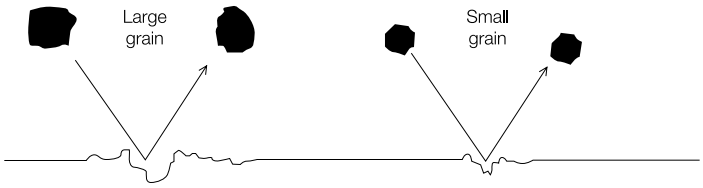
Variable		Effect
More durable abrasive	=	Deeper profile
Less durable abrasive	=	Shallower profile
Hardened steel	=	Shallower profile
Mild steel	=	Deeper profile

Abrasive Shape e.g. Steel Shot vs Steel Grit



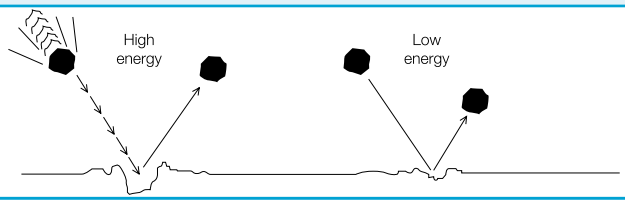
Variable		Effect
Round abrasive	=	Dimpled, peened profile
Angular abrasive	=	Sharper, rugged profile

Abrasive Size #20/40 Garnet vs 80# Garnet



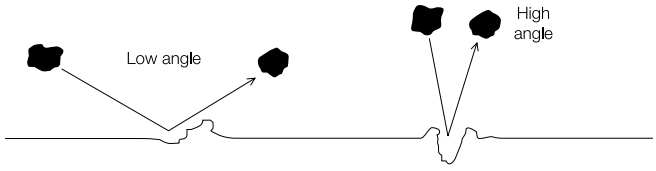
Variable		Effect
Larger abrasive	=	Deeper profile
Smaller abrasive	=	Shallower profile

Impact Energy e.g. Nozzle pressure (abrasive velocity), nozzle wear, nozzle standoff distance, dwell time



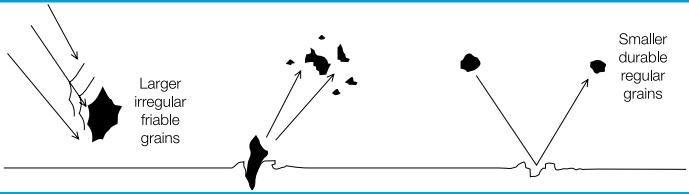
Variable		Effect
Greater energy	=	Deeper profile
Lesser energy	=	Shallower profile

Impact Angle e.g. Straight on blasting vs side reach blasting



Variable		Effect
Low angle	=	More scuffed profile
High angle	=	More peak 'n' valley even profile

Embedment e.g. Slag vs Garnet



Variable		Effect
Large friable irregular grains	=	Higher risk of embedment
Smaller durable regular grains	=	Lower risk of embedment

Nozzle Pressure vs Blasting Efficiency

Work Under The Right Pressure

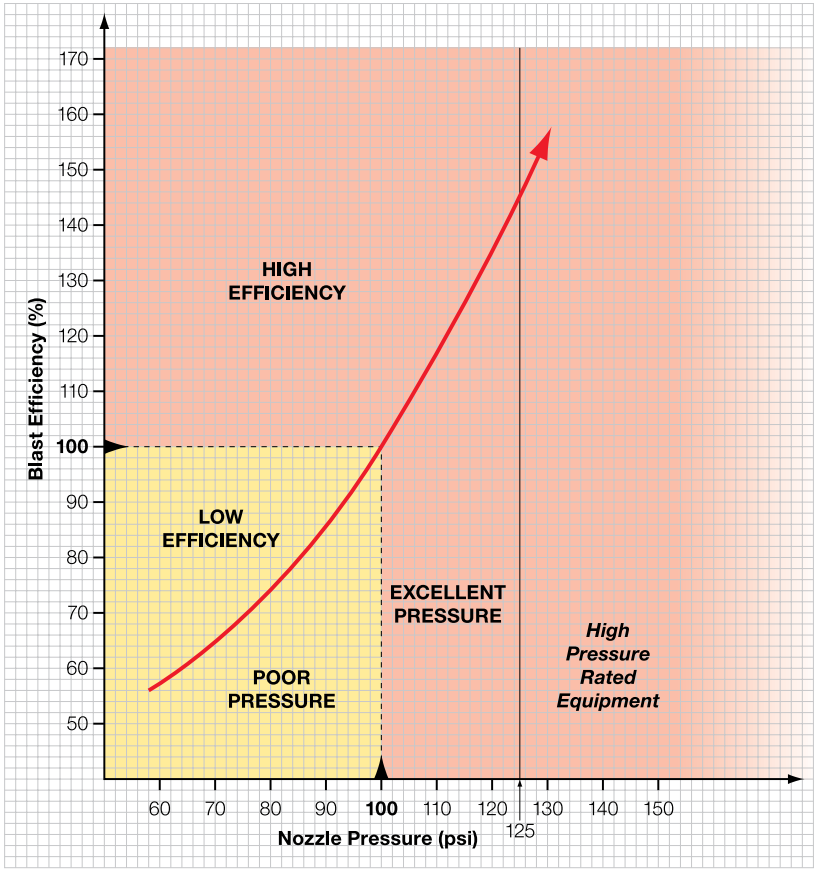
Check nozzle pressure for productivity.

Use a hypodermic needle pressure gage kit, and insert the needle into the blast hose slowly, a few inches back from the nozzle. Point the needle toward the nozzle, and at a slight angle. Insert slowly until you get a constant reading. Are you getting 100psi?

Did you know?

Increasing your nozzle pressure to 100 psi will boost your efficiency substantially!

See Blast-One Catalogue p359 for more information.



Nozzle Pressure vs Efficiency

Blast Nozzle Pressure	Approximate Abrasive Velocity	Approximate Efficiency Factor
100 psi	**675 kph (422 mph)**	**100%**
95 psi	640 kph (400 mph)	93%
90 psi	585 kph (366 mph)	86%
85 psi	530 kph (331 mph)	80%
80 psi	495 kph (309 mph)	74%
75 psi	450 kph (281 mph)	69%
70 psi	420 kph (263 mph)	64%

The Golden Rule of Thumb

Every 1 psi below 100 psi pressure at the nozzle equates to a 1.5% LOSS of blasting efficiency*.

Nozzle Pressure			% Increase
94 psi	to	100 psi	**9.4%**
90 psi	to	100 psi	**16%**
80 psi	to	100 psi	**35%**
70 psi	to	100 psi	**57%**

** Approximate calculated efficiency – actual efficiency realized will vary, depending on abrasive type, abrasive size, nozzle size, nozzle type, nozzle wear, hose size, hose wear, moisture content of compressed air, temperature of the compressed air, etc…*

Cost Effective Blast Cleaning

Calculating the true cost of Blast Cleaning in Dollars per Square Foot

$$\text{True Cost of Blast Cleaning (\$/ft}^2\text{)} = \frac{A\,(B + C) + D + E}{X}$$

- **A = Abrasive consumption rate (lb/hour)**
- **B = Abrasive cost, delivered to site ($/lb)**
- **C = Abrasive clean-up and disposal cost ($/lb) including cartage, landfill.**
- **D = Blasting labour cost ($/hour) including allowance for holidays, super, WorkCover, etc.**
- **E = Equipment cost ($/hour), compressor, blast unit, truck, safety, access equipment, fuel, power, insurance, etc.**
- **X = Cleaning production rate (ft²/hour)**

(C, D and E are usually common costs)

A Comparative Example

Blaster **Chuck** buys a **cheap** abrasive at a cost of **$0.08/lb** and a 6 cu ft pot **lasts 30 minutes** (i.e. 1200lb per hour). He blasts **150ft²** of steel in 1 hour.

Chuck's True Cost = $\frac{1200\,(0.08 + 0.02) + 20 + 60}{150}$ = **$1.33/ft²**

Blaster **Harry** buys a **superior** abrasive at a cost of **$0.30/lb** and a 6 cu ft pot **lasts 1.25 hours** (i.e. 550lb per hour). He blasts **250ft²** of steel in 1 hour.

Harry's True Cost = $\frac{550\,(0.30 + 0.02) + 20 + 60}{250}$ = **$1.02/ft²**

The difference between Blaster **Chuck** and Blaster **Harry's** True Cost is $0.31/ft². And remember, in this example, Blaster Harry paid $0.30/lb for a superior abrasive with minimal salt levels, less contaminants and less dust! So, the more expensive abrasive resulted in lower costs.

Calculate the True Cost using your figures and overheads using the box on the right.

Calculate the True Cost using your figures and overheads

True Cost ($/ft²) =

consumption (abrasive cost + disposal cost) + labour + equipment, etc

cleaning speed

Your Cost ($/ft²) =

September/October Specials

PaintGage 6000 Coating Thickness Gage

- Basic Standard Ferrous Model with built-in probe
- Up to 60 mils
- *For more information, see page 252 of the Blast-One Catalog*

Normally $699

$599

PaintGage Dew Point Meter

- Measure humidity, air and surface temperature, dew point and difference in one gage!
- *For more information, see page 239 of the Blast-One Catalog*

Normally $745

$650

¼" Airless Spray Hose

- 50' long, ¼" Airless Hose with swivel fittings
- 6000 psi rated
- *For more information, see page 299 of the Blast-One Catalog*

Normally $99

$75

Jiffy Paint Mixer

- Super fast twin blade design
- Proper effective mixing action
- Suits 5 gallon pail
- *For more information, see page 329 of the Blast-One Catalog*

Normally $59

$35

RotorBlast Internal Pipe Blaster

- Twin nozzle spinning blast head to blast internals of pipe up to 36" ID
- *For more information, see page 173 of the Blast-One Catalog*

Normally $1,950

$1,200

Calico Spray Hoods

- Helps keep dust and overspray out of your hair
- *For more information, see page 158 of the Blast-One Catalog*

Normally $2 ea

$0.99 ea

Nova 2000 Blast Helmets

- Luxury blast helmet
- Complete with cool air conditioner
- *For more information, see page 135 of the Blast-One Catalog*

Normally $493

$375

Blasting & Painting Reference Guide

An absolute must-have that features over 250 new products, money saving ideas and easy ordering for over 3000 items.

Normally $125

FREE

The Blast-One Guarantee

We will offer a 30-Day Money Back or Replacement Guarantee on any products you are not fully satisfied with.

2400 Landmark Way, Columbus, OH 43219
Toll free **1-877-7 BLAST 1**
Tel **(614) 476-3000** Fax **(614) 476-6939**
Email **sales@blast-one.com** Web **www.blast-one.com**