



Dr. Prepper

ACADEMY

Bristle Blasting VS Grit Blasting: Processes for Field Pipeline Surface Preparation

In the 6th edition of Dr. Prepper we take a look at Robert J Stango, Ph. D. comparative study between the Bristle Blasting process and the Grit Blasting process. In this edition we take a look at the results of both processes produced when utilized.

The results shown in this Dr. Prepper are the result of the abrasive blasting process. Both processes are schematically illustrated, and the final results are illustrated by a photomicro-graph. A chart illustrates the difference in lifespan of coating applied after either blasting process.

The results that the blasting processes are objectively noted throughout this Dr. Prepper. We close this edition with a comparative conclusion by Robert J Stango, Ph. D. himself.

No. 6
Paper edition

1. THE ABRASIVE BLASTING PROCESS

Bristle Blasting

The Bristle blasting tool (see Figure 1A) has a brush-like appearance, and consists of sparsely populated wires having sharpened tips. As the spindle rotates, each bristle tip strikes the metallic surface and immediately retracts/rebounds, thereby causing a multitude of impact craters that are similar to those formed during grit blasting operations. This repetitive process both removes the corrosive layer and generates a fresh surface having the coarse pattern shown in Figure 1B.

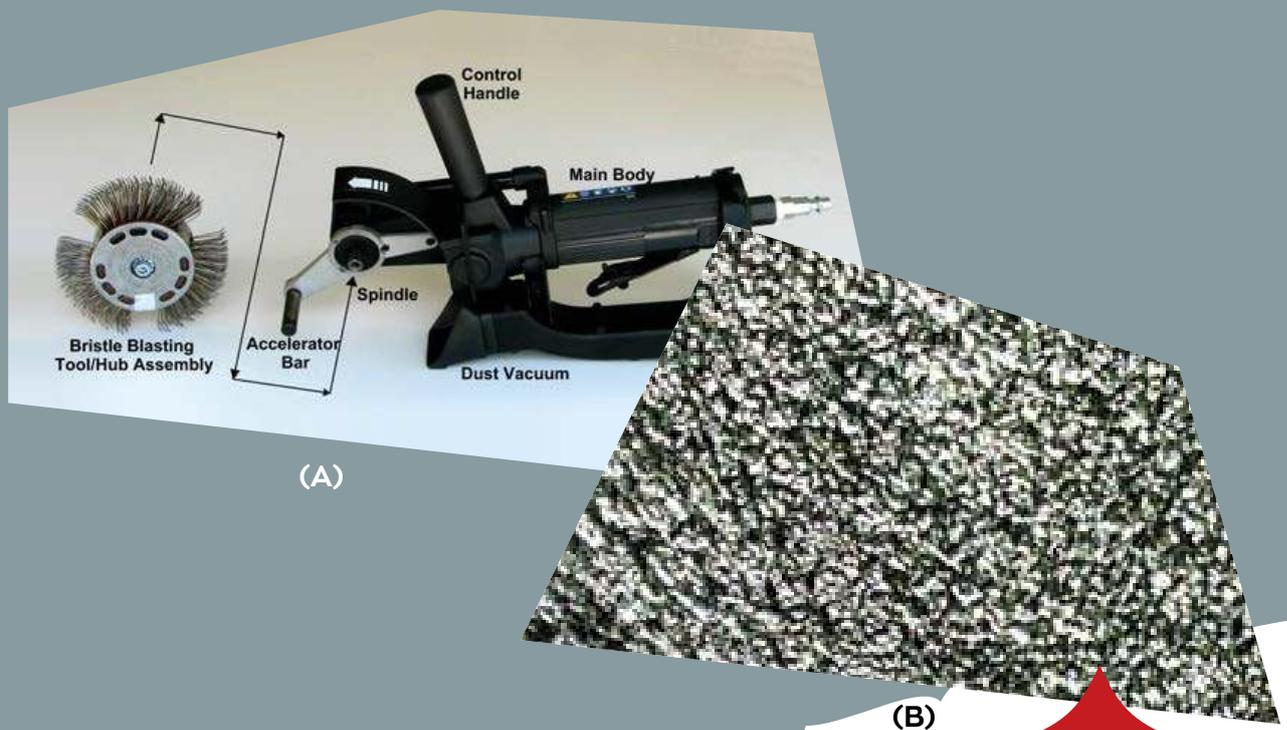
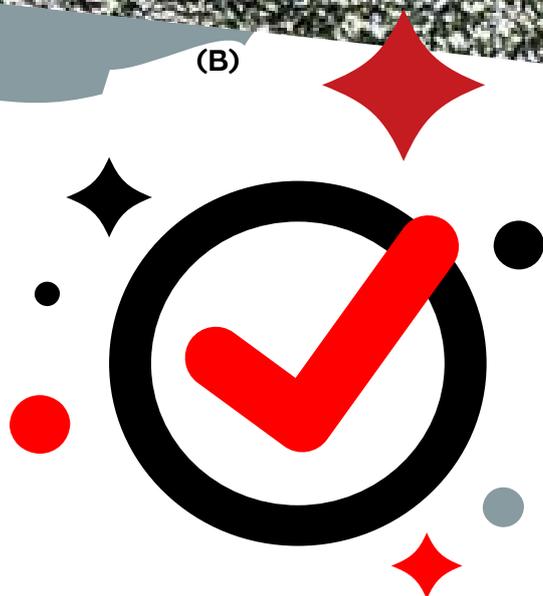


Figure 1 (A) Bristle blasting power tool system (pneumatic version shown), and (B) characteristic surface generated by bristle blasting process.



VS

Grit Blasting

Grit blasting processes utilize “loose” abrasive grains, which are propelled toward the target surface, as shown in **Figure 2A**. Upon impact, each abrasive grain forms a “crater-like” micro-indentation, which simultaneously removes friable corrosion and exposes fresh substrate.

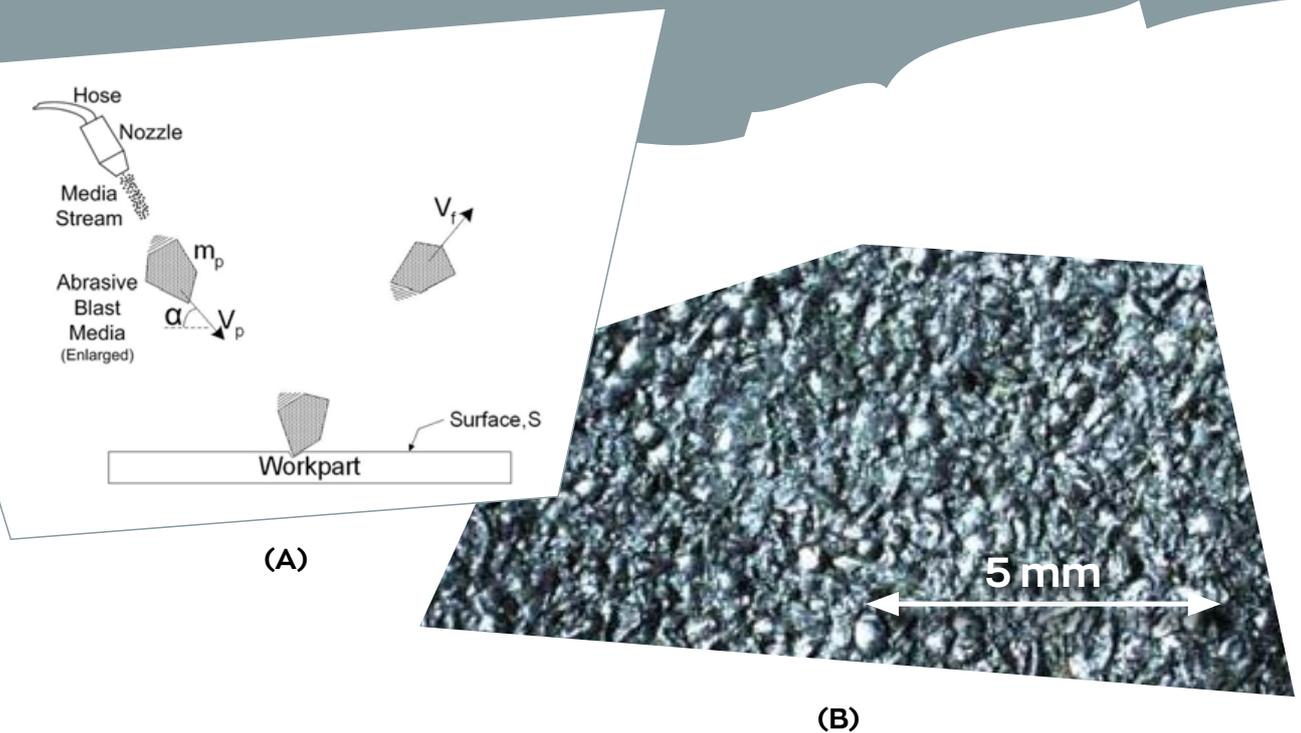


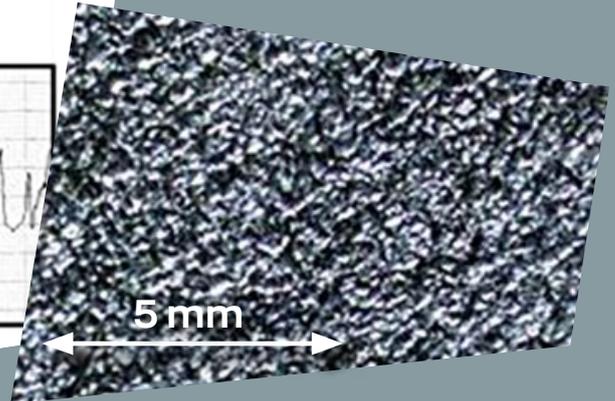
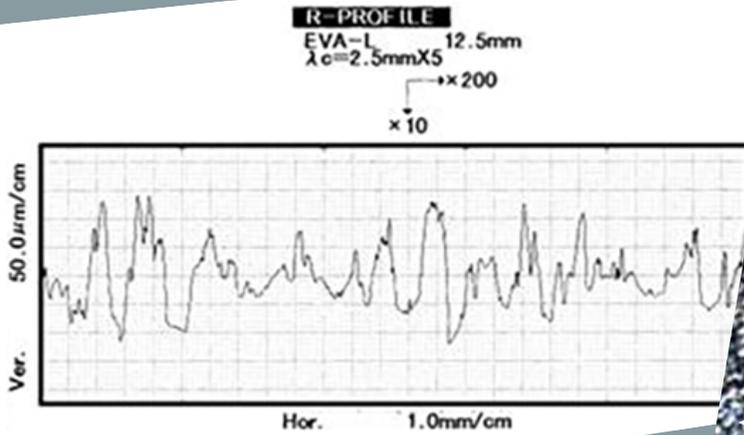
Figure 2 (A) Schematic of abrasive blasting process, and **(B)** characteristic grit blast surface generated by G16 steel media.

As depicted in **Figure 2B**, the repeated micro-indentations generate a surface texture that consists of “peaks and valleys”, which are associated with the recurring impact and deformation of the workpart surface.

2. PHOTOMICRO-GRAPH & PROFILOMETRY

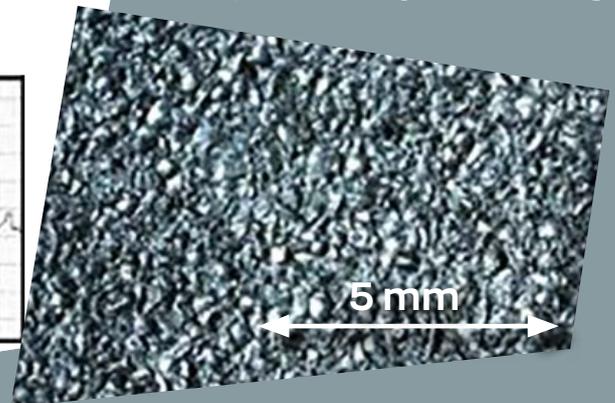
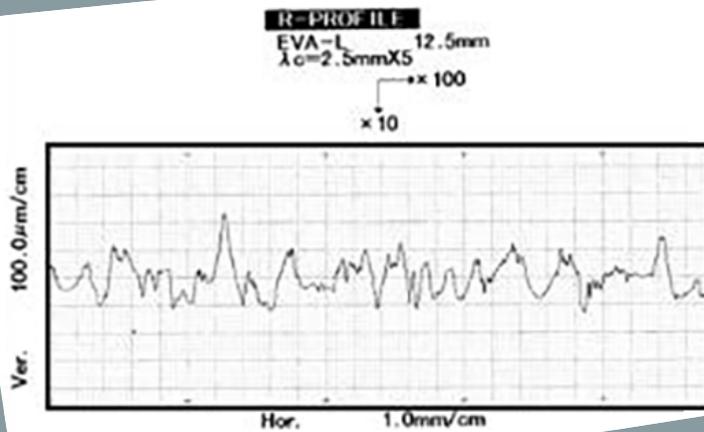
Bristle Blasting

Figure 3 Photomicro-graph and profilometry Bristle Blasting



Grit Blasting

Figure 4 Photomicro-graph and profilometry Grit Blasting



3. COATING LIFESPAN

In comparison to the traditional blasting process, Bristle Blasting significantly prolongs the lifespan of the adhesion of the coating.

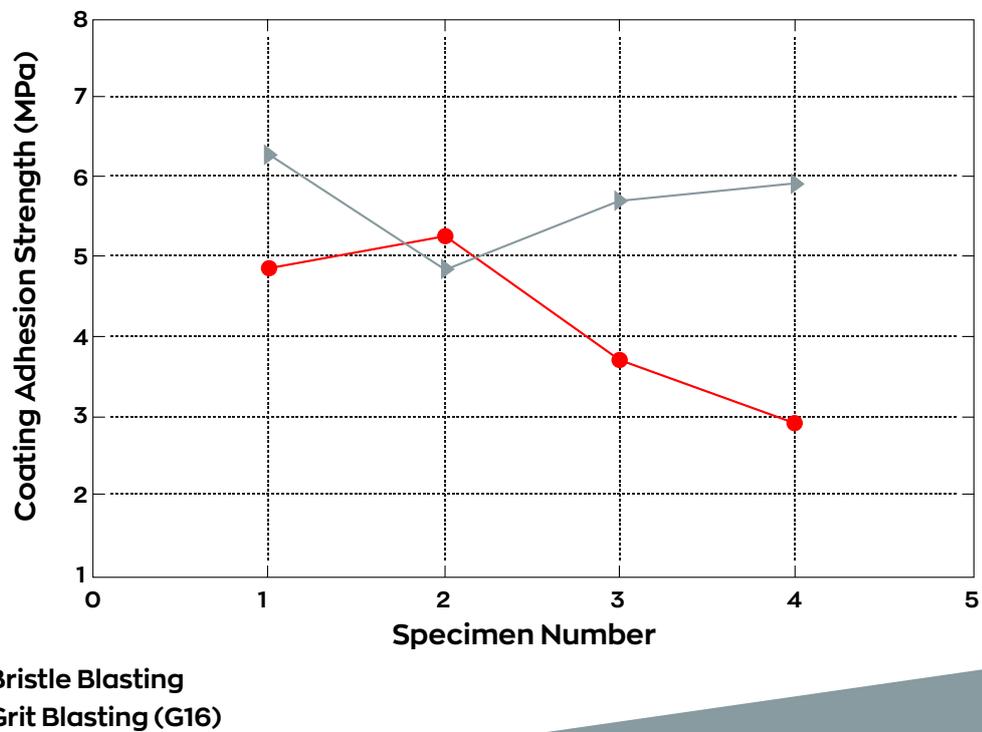
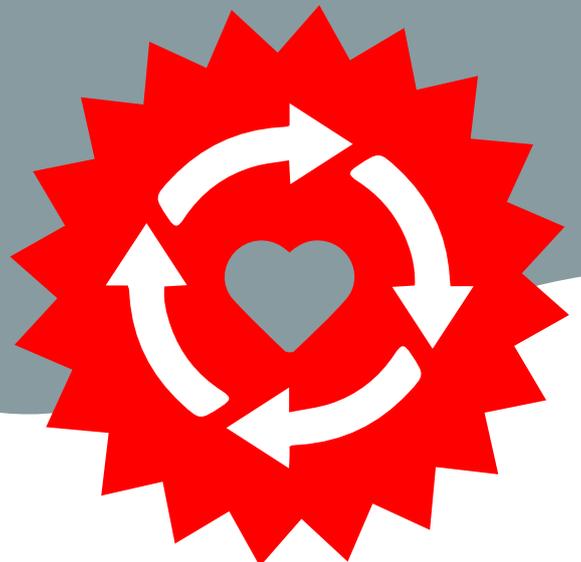


Figure 5 Coating Lifespan Chart
Bristle Blasting & Grit Blasting



4.

CONCLUSION BY

ROBERT J STANGO, PH. D.

The Bristle Blasting technology is a perfect alternative to conventional blasting methods. The related tool, the MontiPower® Bristle Blaster®, is capable of generating an abrasive blast finish on a metal surface, simultaneously removing corrosion, coatings and mill scale.



WE BELIEVE IN THE POWER OF INNOVATION

By preparing optimal surfaces, we make coatings work better. Montipower® has been innovating original surface preparation machinery, quality made in Germany, since 1987.

MontiPower - Part of Monti Group
MONTI - Werkzeuge GmbH
Reisertstr. 21 | 53773 Hennef | Germany
T +49 (0) 2242 9090 630
info@montipower.com
www.montipower.com