

▶ Annual
Corrosion
Forum (ACF)

▶ Aberdeen Branch - August 2021



trac

▶ Sponsor: TRAC Oil and Gas



Title: Surface Preparation



Speaker's Name: Colin Fowles
Position: Operations Manager
Company: Presserv UK



War against Corrosion starts with Surface Preparation

STUART RENNIE

COMMERCIAL MANAGER

PRESSERV GROUP

Fact:

NACE state
that 60% of all
coating failures
can be put
down to poor
surface
preparation



Most commonly used method is still abrasive blasting, since 1800s

Effects of profile and peak density

- Pressure
- Media
- Angularity



Power tools

- For instance a grinder or rotating brush
- Powertool – uses an external power source
- Poor profile and burnishing



Hand tools

- Poor profile
- Does not remove millscale



So, for instance by a wirebrush.

Handtool

Visual standard conformance

The tape or visco-elastic coatings
manufacturers claim

this for complete rehab work



Surface Preparation Standards

- Surface preparation standards exist to maximize coating life and minimize costs.
- Surface prep accounts for up to 40% of the cost of a recoat job, asset owners look save cost and time.






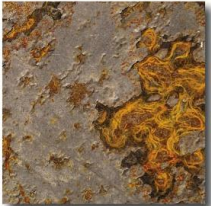




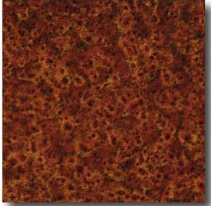









note... Rust does have a kind of profile and remains are seen as contamination interfering with adhesion



Pictorial ISO 8501 standard...

ISO 8501 is a pictorial standard

- Sa 1 Light Blast Cleaning
- Sa 2 Thorough Blast Cleaning
- Sa 3 Blast Cleaning to Visually Clean Steel

	UNBLASTED	BLAST CLASS 1 Nace No 4	BLAST CLASS 2 Nace No 3	BLAST CLASS 2 1/2 Nace No 2	BLAST CLASS 3 Nace No 1
RUST GRADE A					
RUST GRADE B					
RUST GRADE C					
RUST GRADE D					
	UNBLASTED	BLAST CLASS 1 Nace No 4	BLAST CLASS 2 Nace No 3	BLAST CLASS 2 1/2 Nace No 2	BLAST CLASS 3 Nace No 1

Innovation

“The electric light did not come from continuous improvement of candles”

Oren Harari



What are we looking for?

- ▶ A replacement of abrasive blasting
- ▶ Water jetting – HPWJ, UHPWJ
- ▶ Vapour blasting
- ▶ Low dust abrasive blasting, (Sponge)
- ▶ Bristle blasting



New Technologies in Blasting that meet new Environmental Regulations

- ✓ Low Dust
- ✓ Reduced Noise
- ✓ Clean
- ✓ No impact on SimOps
- ✓ Recyclable Media
- ✓ Less waste
- ✓ No harmful by-products
- ✓ Applicator Health



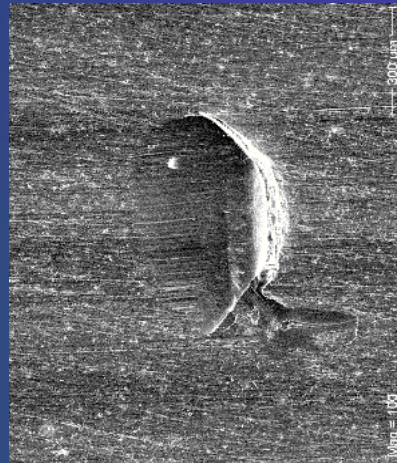
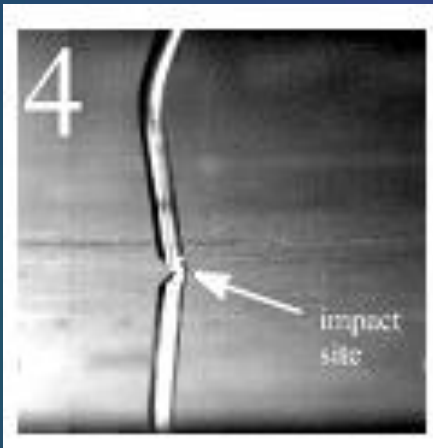
Method of 'Bristle Blasting'

- Certainly cleaner than St2-3, and similar to SA3
- Always above 50 Micron Rz with various amount of Rpc, or Ra
- Pre determine the anchor profile, peaks and valleys as well as the peak density as per coating viscosity

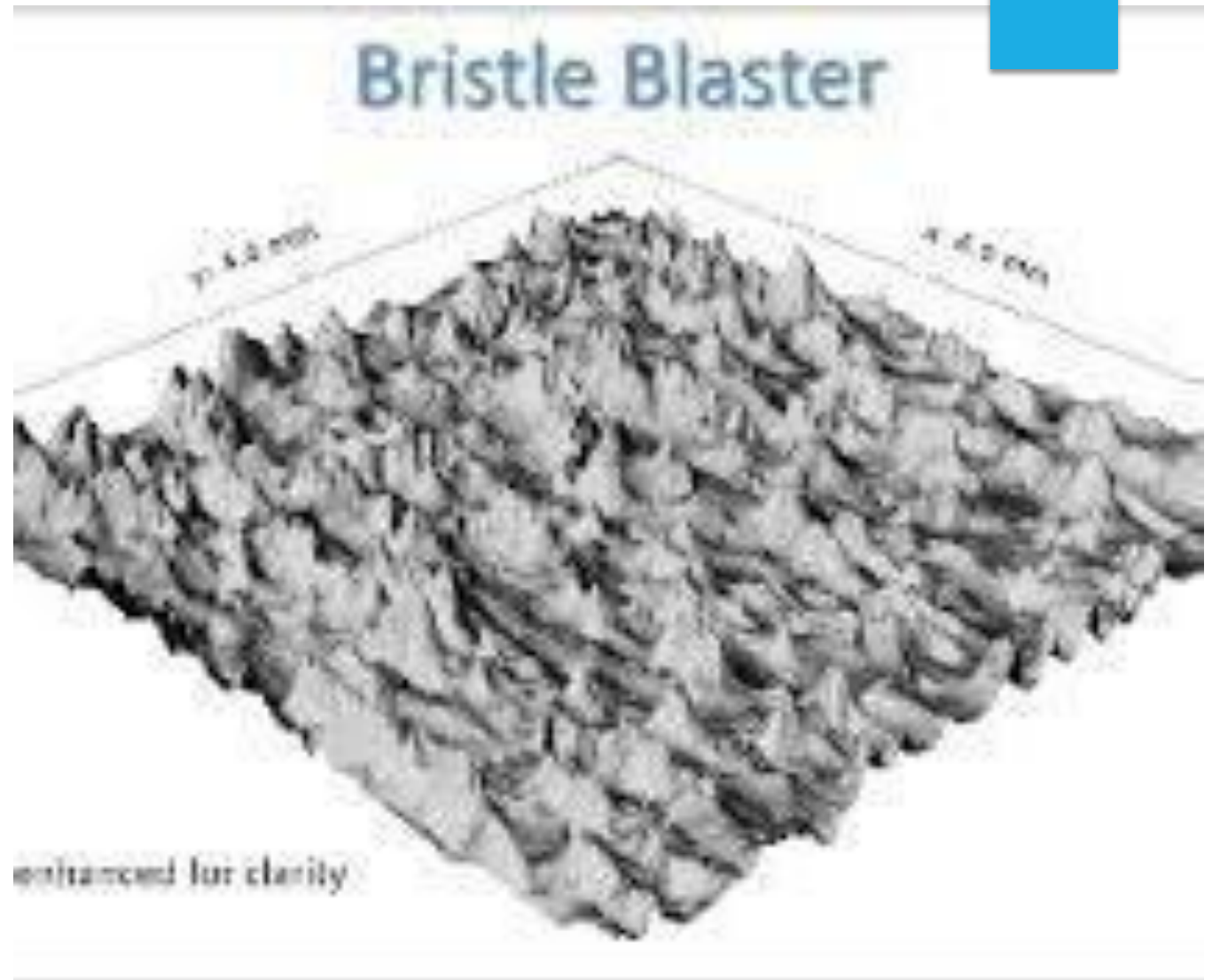
IT IS JUST A DIFFERENT METHOD



Bristle blasting



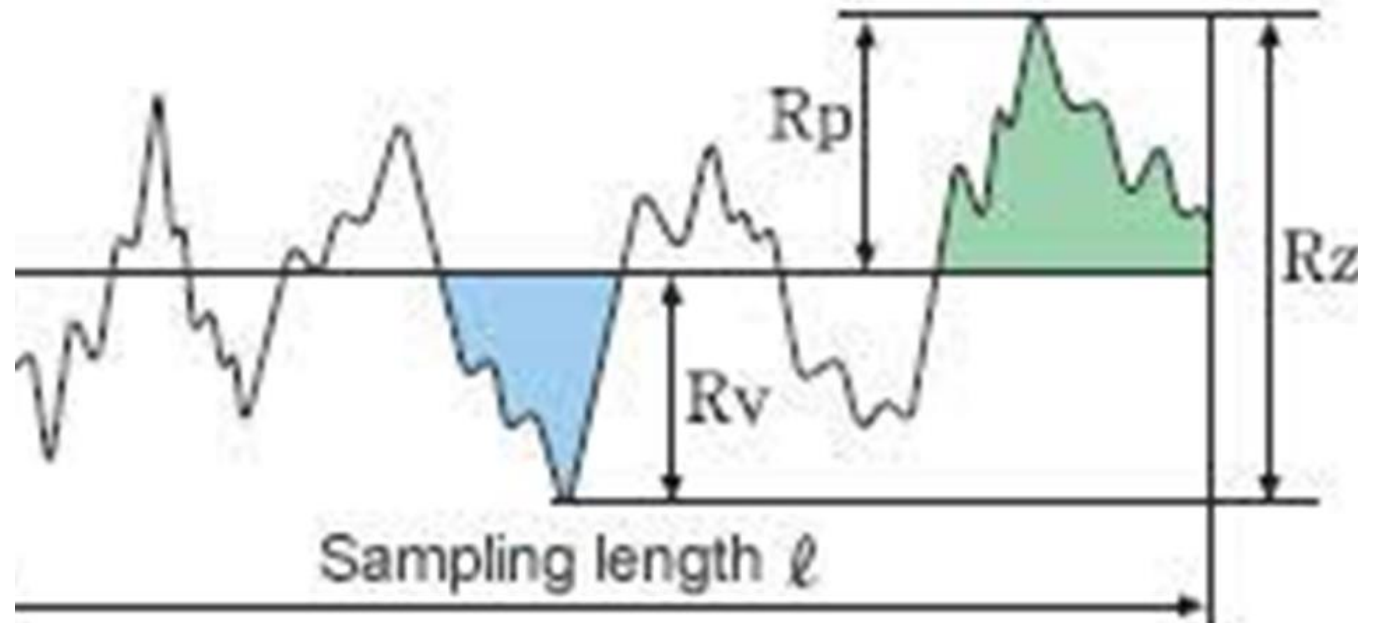
- Profile and peak density



What is the objective for profiling?

- Increasing the surface area – more to cover
- Mechanical bond – anchoring or interlocking
- Reduce coating stress during curing and aging – contraction (relaxation)

$$R_z = R_p + R_v$$



Surface roughness comparator

- Visual



In summary...

- ✓ SPECIFICATION OF SURFACE PREPARATION IS ESSENTIAL
- ✓ UNDERSTAND CLEANLINESS AND PROFILE REQUIREMENTS
- ✓ SEEK THE BEST TECHNOLOGY FOR THE JOB, PEOPLE AND ENVIRONMENT
- ✓ APPLIES TO FULL MAINTENANCE REPAIRS AND PATCH REPAIRS EQUALLY



End of Presentation – Your Questions Please