

"A RECIPE FOR RUST "

Take 2 parts iron (FE).

Combine with 3 parts Oxygen (O).

Add water and salt to taste.

Increase temperature to speed up process.

TEMPERATURE: Generally corrosion rates increase with increases in temperature. This is due to several interrelated factors:

1. Higher temperatures tend to promote the corrosion reaction kinetics. Therefore except in cases where oxygen is free to escape, higher temperatures boost the corrosion rate.

(Essentially makes the corrosion reaction go to completion more quickly)

2. Corrosive by-products will have a higher diffusion rate at higher temperatures and thus will be delivered to the corroding surface more efficiently.

(Note: In open systems certain corrosive gases actually have lower solubility at higher temperatures. Thus an increase in temperature may result in a decrease in the corrosive gas solubility and accordingly a decrease in the corrosion rate as well.)

pH: Almost without exception the rate of corrosion increases with decreasing pH (increased acidity). This is due to corresponding increase in the H^+ (hydrogen ion) concentration as well as the associated increase in the solubility of most other potentially corrosion enhancing substances.

OXYGEN AND OXIDIZER LEVELS: As one would suspect oxygen acts as an oxidizing agent in the corrosion process as do other common oxidizers such as Cl_2 (chlorine gas) and Br_2 (bromine gas). As the concentration of these agents rises, corrosion rates increase.

PAINTING INSPECTION

ADHESION TESTING, MECHANICAL



TO USE

Ensure the test area is clean and oil/grease free, lightly abrade the area and apply mixed two pack heavy duty adhesive. Firmly place the aluminium alloy dolly in position onto the adhesive ensuring that the skirted flange is to the adhesive. Leave for manufacturers recommended cure time. Place the core drill supplied around the dolly and cut through the coating to the substrate (this ensures that only the area of the dolly flange receives the pull off forces). Apply the pull off gauge and apply pull off force, (some models use a ratcheted lever, others a knurled wheel) until failure occurs. This will usually involve a loud bang and the instrument will 'jump' from the substrate. Examine the face of the dolly and apportion adhesive failure according to areas exposed, at the pull off force indicated on the scale.

PAINTING INSPECTION

MAGNETIC COATING THICKNESS GAUGE

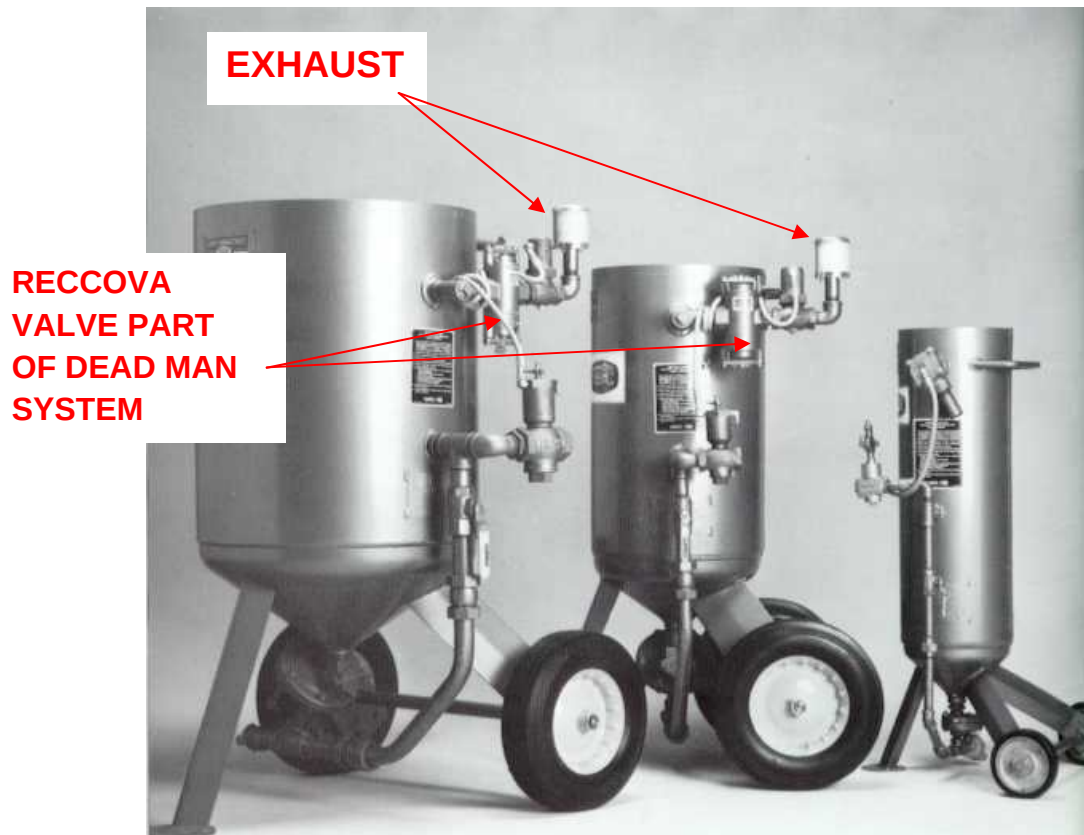
BANANA GAUGE



THIS IS ONE OF THE MOST IMPORTANT ITEMS OF EQUIPMENT FOR BGAS AND EXTENSIVE PRACTICAL TRAINING IS REQUIRED.

SURFACE PREPARATION.

BLASTING POTS - MACHINES



Blasting Pots and Machines come in many varieties and sizes.

3 points to remember:

A) Blast cleaning is dangerous, so don't get too close it !

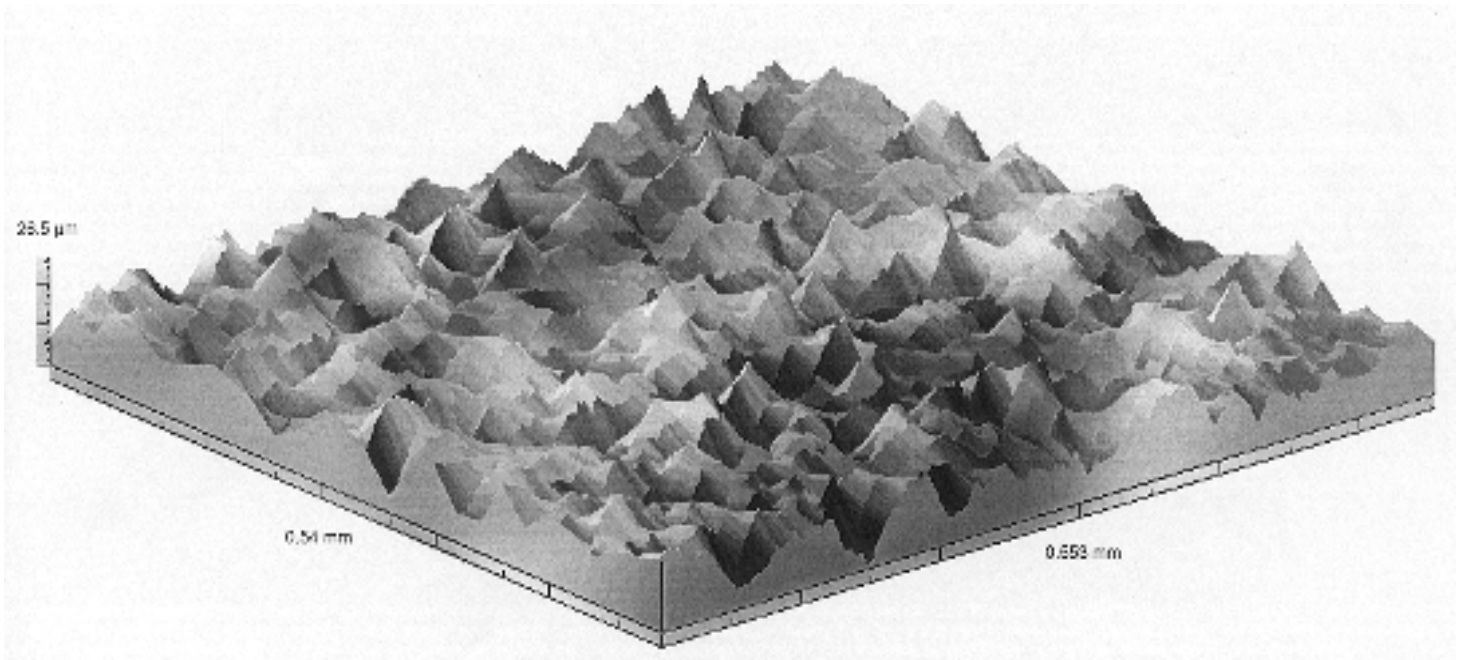
B) Grit exits the nozzles (Venturi) at 450 mph or 720 kph !

C) When the blaster releases the dead man handle the pot will exhaust the air inside very quickly, it is noisy and always contains particles of grit !!!!!

SAFETY – SAFETY – SAFETY - SAFETY

SURFACE PROFILE

SURFACE ROUGHNESS - AMPLITUDE



THE ABOVE SUBSTRATE HAS BEEN GRIT BLASTED AND IS AN ACTUAL PICTURE OF THE BLASTED PROFILE.

THE PROFILE IS 28.5 MICRONS HIGH, AND THE SAMPLE SIZE IS APPROXIMATELY 0.5mm x 0.5 mm VIEWED UNDER MAGNIFICATION.

BLASTING ABRASIVES.

COPPER SLAG

NON METALLIC MINERAL

EXPENDABLE ABRASIVE

NOT TO BE REUSED!!!



SUPPLIED AS A GRIT

**SHATTERS ON IMPACT AS IT IS VERY
BRITTLE**

BLASTING ABRASIVES.

GARNET

NON METALLIC MINERAL ABRASIVE

EXPENDABLE ABRASIVE

**BUT MAY BE REUSED UP TO 3 TIMES IF RECYCLING
AND CLEANING SYSTEMS ARE IN PLACE!!!**



**CLASSIFIED AS “DIAMOND TYPE HARDNESS”
WEARS WITH USE RATHER THAN SHATTERS
& SUPPLIED IN GRIT FORM**

BLASTING ABRASIVES.

METALLIC GRIT

METALLIC ABRASIVE

REUSED WITH RECYCLING AND CLEANING SYSTEMS



**HIGH WEAR OF EQUIPMENT, NOT NORMALLY
USED IN ENCLOSED BLASTING SYSTEMS BY IT'S
SELF. VERY HARD AND SLOWLY WEARS WITH
USE. SUPPLIED IN GRIT FORM**

BLASTING ABRASIVES.

METALLIC SHOT/GRIT **MIXED**

METALLIC ABRASIVE

REUSED WITH RECYCLING AND CLEANING SYSTEMS



**LOW WEAR OF EQUIPMENT, NORMALLY USED IN
ENCLOSED BLASTING SYSTEMS. THE MIX
ENABLES ACCURATE AND CONTROLLED
SURFACE PROFILES.**

BLASTING ABRASIVES.

METALLIC SHOT

METALLIC ABRASIVE

REUSED WITH RECYCLING AND CLEANING SYSTEMS



LOW WEAR OF EQUIPMENT, NORMALLY USED IN ENCLOSED BLASTING SYSTEMS BY IT'S SELF OR MIXED WITH GRIT. VERY HARD AND SLOWLY WEARS WITH USE. SUPPLIED IN ROUND FORM

BS 7079 Part A, ISO 8501, SS 05 59 00

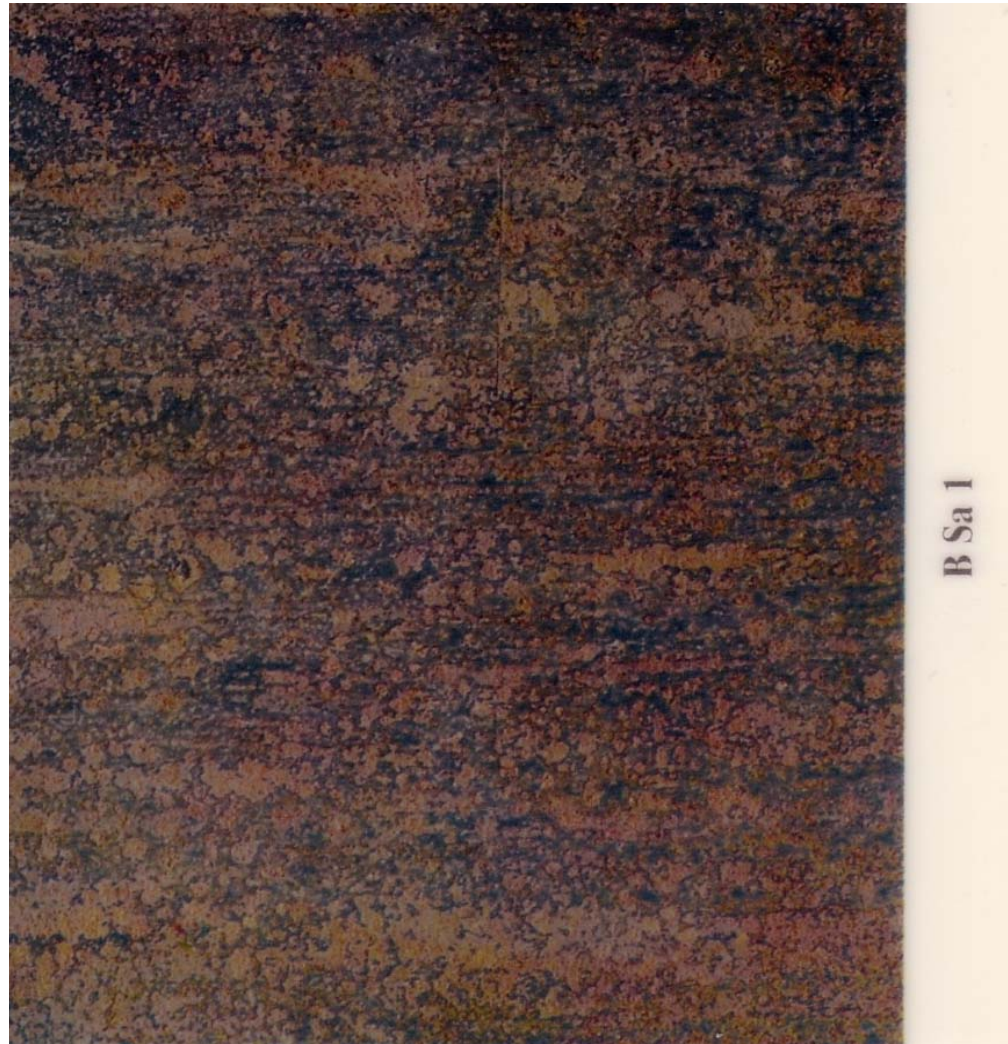
BLASTING STANDARDS

SA 1

LIGHT BLAST CLEANING

***WHEN VIEWED WITHOUT MAGNIFICATION, THE
SURFACE SHALL BE FREE FROM VISIBLE OIL, GREASE
AND DIRT AND FROM POORLY ADHERING MILLSCALE,
RUST, PAINT COATINGS AND FOREIGN MATTER.***

BLASTING STANDARDS



SA 1 BLAST TO RUST GRADE B SUBSTRATE

BS 7079 Part A, ISO 8501, SS 05 59 00

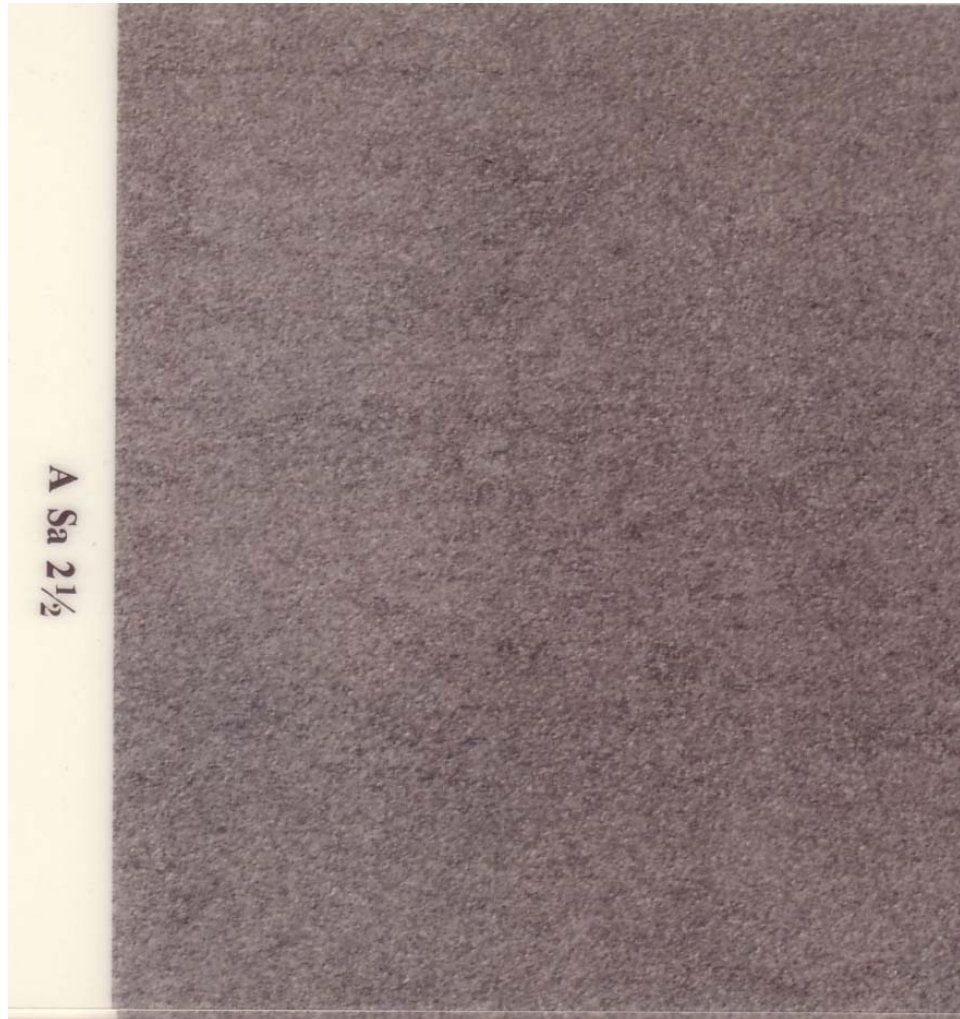
BLASTING STANDARDS

SA 2 ½

VERY THOROUGH BLAST CLEANING

WHEN VIEWED WITHOUT MAGNIFICATION, THE SURFACE SHALL BE FREE FROM VISIBLE OIL, GREASE AND DIRT AND FROM MILLSCALE, RUST, PAINT COATINGS AND FOREIGN MATTER. ANY REMAINING TRACES OF CONTAMINATION SHALL SHOW ONLY AS LIGHT STAINS IN THE FORM OF SPOTS OR STRIPES.

BLASTING STANDARDS



SA 2 ½ BLAST TO RUST GRADE A SUBSTRATE

BS 7079 Part A, ISO 8501, SS 05 59 00

BLASTING STANDARDS

SA 2

THOROUGH BLAST CLEANING

WHEN VIEWED WITHOUT MAGNIFICATION, THE SURFACE SHALL BE FREE FROM VISIBLE OIL, GREASE AND DIRT AND MOST OF THE MILLSCALE, RUST, PAINT COATINGS AND FOREIGN MATTER. ANY RESIDUAL CONTAMINATION SHALL BE FIRMLY ADHERING.

BLASTING STANDARDS



SA 2 BLAST TO RUST GRADE B SUBSTRATE

BS 7079 Part A, ISO 8501, SS 05 59 00

BLASTING STANDARDS

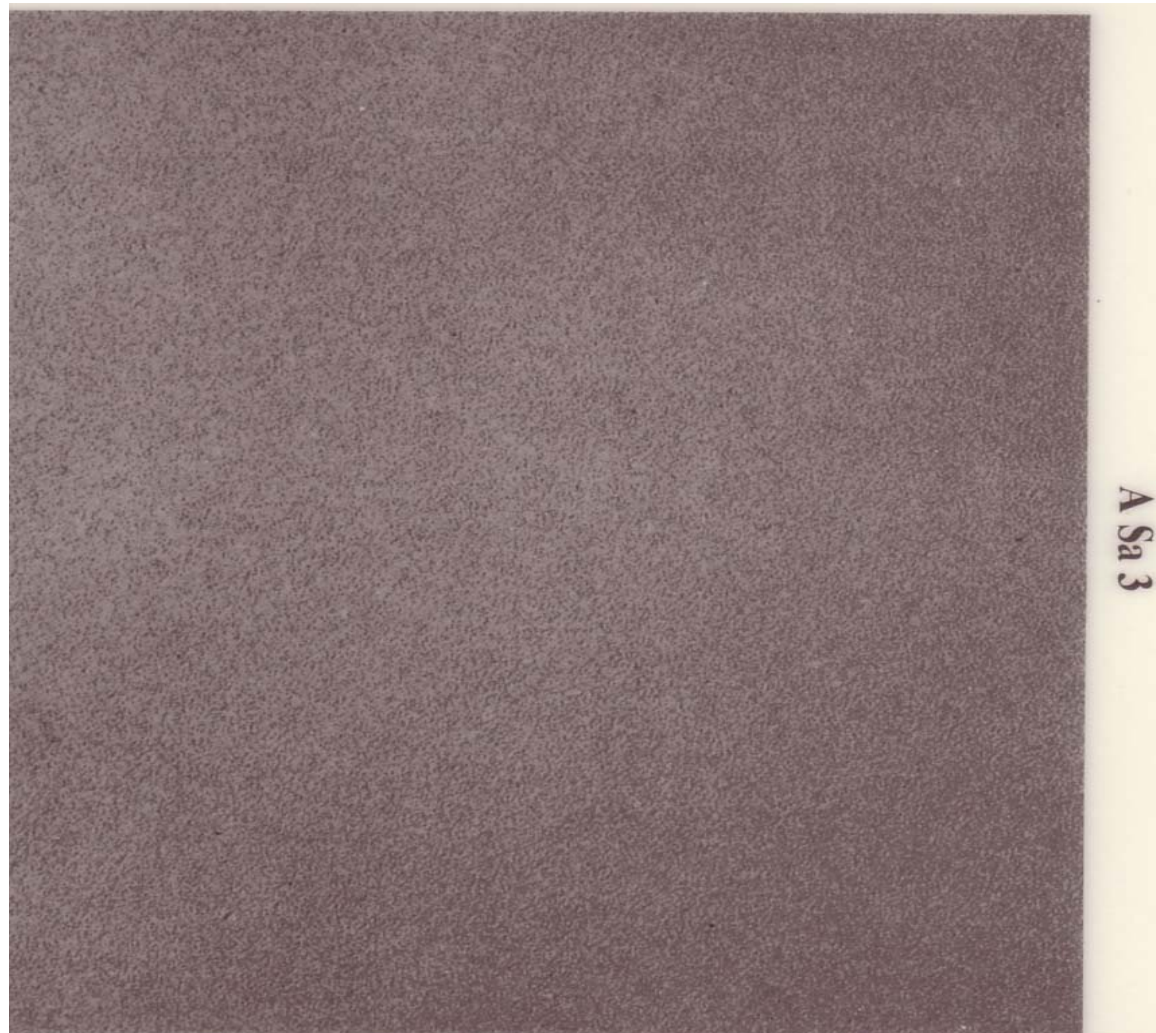
SA 3

BLAST CLEANING TO VISUALLY CLEAN STEEL

WHEN VIEWED WITHOUT MAGNIFICATION, THE SURFACE SHALL BE FREE FROM VISIBLE OIL, GREASE AND DIRT AND FROM MILLSCALE, RUST, PAINT COATINGS AND FOREIGN MATTER.

IT SHALL HAVE A UNIFORM METALLIC COLOUR.

BLASTING STANDARDS



SA 3 BLAST TO RUST GRADE A SUBSTRATE

Calculations:

PAINT DENSITY

$$D = \frac{WEIGHT}{VOLUME}$$

Calculations:

PAINT DRY FILM THICKNESS

$$***DFT = WFT \times VS\%***$$

Calculations:

PAINT VOLUME

$$\text{Volume} = \frac{\text{AREA} \times \text{WFT}}{1000}$$

Calculations:

PAINT VOLUME SOLIDS

$$VS\% = \frac{DFT}{WFT} \times 100$$

Calculations:

PAINT WET FILM THICKNESS

$$WFT = \frac{DFT}{V}$$

OR

$$WFT = \frac{DFT}{V}$$

VS%

AREA

SURFACE TESTING

The Copper Sulphate Test



Copper sulphate test

The test is designed to detect mill-scale on the surface and relies on the potential difference between mill-scale and steel. When immersed in copper sulphate solution a redox reaction takes place and copper metal is deposited on the steel and not on the mill-scale.

Copper Sulfate Test. In test for Mill Scale, copper color indicates absence of mill scale when steel is swabbed with 5 to 10 percent solution.

PAINTING INSPECTION

CROSS HATCH CUTTER



TO USE

The coating thickness determines the Cutter size used. The 1mm Cutter is suitable for coatings under 60 microns, the 2mm cutter is suitable for coatings over 60 microns. Simple operation, each Cross Hatch Cutter has 6 cutting blades spaced either 1mm or 2mm apart, one cutting pass makes 6 cuts in the coating, a second pass at 90° makes a square lattice pattern. Apply Adhesive Tape over cut section and within 5 minutes remove tape. Classify the cut area according to BS 3900 PT E6.

PAINT TESTING

DENSITY (SG) CUP



TO USE

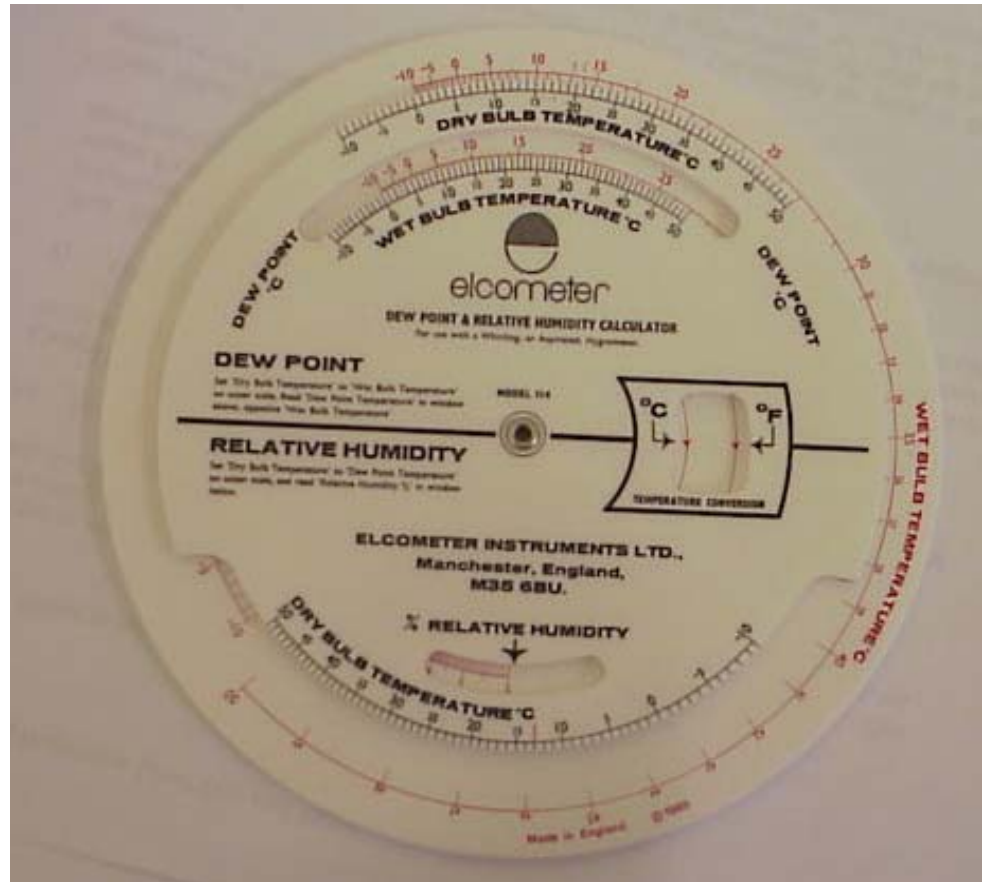
WEIGHT THE CUP CLEAN, EMPTY AND DRY.

FILL THE CUP WITH PAINT TO 2mm OF THE BRIM. FIT THE LID AND ALLOW AIR AND EXCESS PAINT TO ESCAPE. REMOVE EXCESS PAINT BY WIPING AND WEIGH THE CUP AGAIN ON SCALES THAT ARE ACCURATE TO $\pm 0.1\text{gm}$.

DEDUCT THE WEIGHT OF THE EMPTY CUP FROM THE FINAL WEIGHT AND DIVIDE THE WEIGHT BY 100. THE RESULTING ANSWER IS THE DENSITY IN GRMS/CC

PAINTING INSPECTION

THE DEW POINT CALCULATOR



THIS IS ONE OF THE MOST IMPORTANT ITEMS OF EQUIPMENT FOR BGAS AND EXTENSIVE PRACTICAL TRAINING IS REQUIRED.

PAINTING INSPECTION

WET FILM MEASUREMENT – ECCENTRIC WHEEL



TO USE

Hold between thumb & index finger and “roll” through wet paint starting at the roll at zero.

SPRAYERS SHOULD BE COMPLETING THIS AS THEY SPRAY TO ENSURE THEY HAVE APPLIED SUFFICIENT PAINT, IF THEY HAVE NOT THEY CAN APPLY MORE AT THAT TIME.

PAINT TESTING

VISCOSITY, FORD FLOW CUP, NO 4.



TO USE

LEVEL THE STAND & CUP. PLACE ANOTHER CUP UNDER THE FLOW CUP TO CATCH THE PAINT. FILL THE CUP WITH PAINT ENSURING IT IS FULL WHILST COVERING THE 4mm HOLE IN THE BOTTOM. RUN A STRAIGHT EDGE OVER THE LIP OF THE CUP TO ENSURE IT IS FULL. SIMULTANEOUSLY REMOVE FINGER FROM BOTTOM AND START STOP WATCH. TIME UNTIL 1ST BREAK IN FLOW. THE TIME RECORDED IS THE VISCOSITY IN SECONDS AT THE TEMPERATURE.

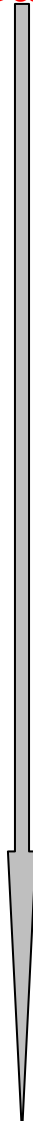
CORROSION

GALVANIC SERIES.

“Electro-motive force series” or the “Electro-Chemical series”

Cathodic end of the table, will not corrode or slow to corrode.

NOBLE



MATERIAL	KNOWN POTENTIAL AV. VALUES
Graphite	+ 0.25 v
Titanium	0.0 v
Silver	- 0.1 v
Nickel 200	- 0.15 v
Lead	- 0.2 v
Admiralty Brass	- 0.3 v
Copper	- 0.35 v
Tin	- 0.35 v
Mill Scale	- 0.4 v
Low Alloy Steel	- 0.7 v
Mild Steel	- 0.7 v
Aluminium Alloys	- 0.9 v
Zinc	- 1.0 v
Magnesium	- 1.6 v

IGNOBLE

Anodic end of the table, **will corrode** or corrode at a faster rate.

Note and remember the relative positions of:

Mill Scale – Steel – Aluminium - Steel

The above materials are an extract from The Galvanic Series and not the complete list of materials.

BS 7079 Part A, ISO 8501, SS 05 59 00

HAND & POWER TOOL CLEANING

ST 2

THOROUGH HAND & POWER TOOL CLEANING

**WHEN VIEWED WITHOUT MAGNIFICATION THE SURFACE
SHALL BE FREE FROM VISIBLE OIL, GREASE AND DIRT AND
FROM POORLY ADHERING MILLSCALE, RUST, PAINT
COATING AND FOREIGN MATTER.**

HAND & POWER TOOL CLEANING STANDARDS



ST 2 TO RUST GRADE B SUBSTRATE

BS 7079 Part A, ISO 8501, SS 05 59 00

HAND & POWER TOOL CLEANING

ST 3

VERY THOROUGH HAND & POWER TOOL CLEANING

AS FOR ST2 BUT THE SURFACE SHALL BE TREATED MUCH MORE THOROUGHLY TO GIVE A METALLIC SHEEN ARISING FROM THE METAL SUBSTRATE.

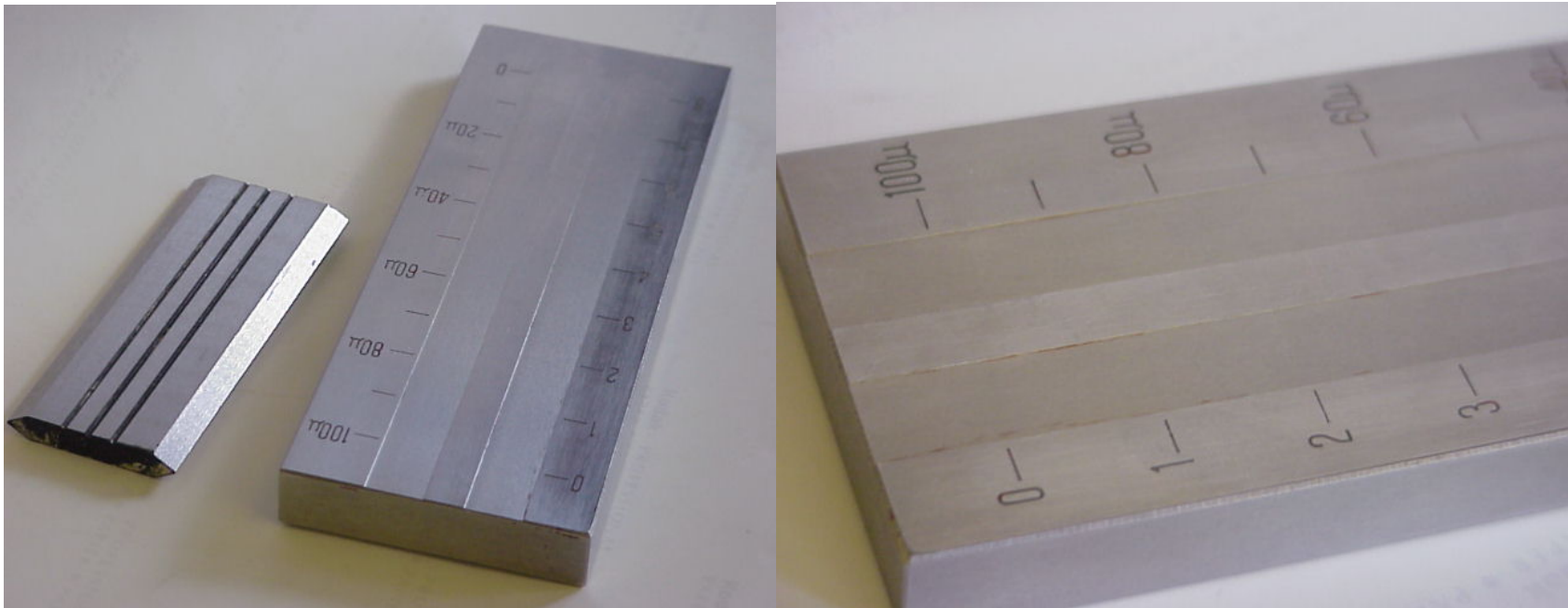
HAND & POWER TOOL CLEANING



ST 3 TO RUST GRADE B SUBSTRATE

PAINT TESTING

FINENESS OF GRIND, HEGMAN GAUGE



TO USE

FILL THE DEEPEST END WITH PAINT. DRAW THE PAINT ALONG THE GAUGE WITH THE PROFILED SCRAPER TO FILL THE ENTIRE LENGTH. WITH IN 3 SECONDS LOOK PARALLEL ALONG THE LENGTH OF THE GAUGE TO SEE WHERE, WITHIN A 3cm LENGTH, WHERE 5 TO 10 AGGREGATES BREAK THROUGH THE SURFACE. THIS WILL SHOW WHERE THE PAINT CHANGES FROM GLOSS TO MATT WITH GLOSS BEING THE DEEPER END AND MATT BEING THE SHALLOW END.

PAINTING INSPECTION

HIGH VOLTAGE HOLIDAY DETECTOR



TYPICAL HIGH VOLTAGE SETS FOR PINHOLE AND HOLIDAY DETECTION OPERATE UP TO 5KV, THIS IS FAR TOO HIGH FOR A NORMAL PAINT SYSTEM. USED FOR PAINTING SYSTEMS THAT ARE ABOVE 500 MICRONS.

PAINTING INSPECTION

WET SPONGE HOLIDAY DETECT



The sponge electrode is wetted in water with a tiny amount of detergent/washing up liquid added, and squeezed out to remove excess water. Attach earthing wire to items under inspection. After switching on and selection of operating voltage, the sponge is traversed methodically over the area. On a vertical surface it is better to work upwards. On contact with a pinhole, the wetting agent (detergent) allows immediate penetration of the water, so providing a very low resistance circuit back to the control box. A high pitched bleep indicates the presence of a pinhole, the exact position of which is located by using a corner of the sponge. The position is then marked ready for repair. Used for coating thicknesses of LESS than 500 microns. Typical voltage range 9 to 90 volts, some can be set at 67.5 volts.

PAINTING INSPECTION

ADHESION TESTING

HYDRAULIC ADHESION TEST EQUIPMENT (HATE)



TO USE

This is a much quicker test with a higher degree of accuracy than the mechanical. The HATE use Cyano-acrylic impact adhesives and can usually be done approximately two hours after dolly/adhesive application, the dolly's are mild steel and reusable because they are heated up to destroy the adhesive after use. Big downside for this test is initial cost and usually high maintenance.

PAINTING INSPECTION

THE WHIRLING HYGROMETER

ASPIRATED HYGROMETER OR PSYCHROMETER



THIS IS ONE OF THE MOST IMPORTANT ITEMS OF EQUIPMENT FOR BGAS AND EXTENSIVE PRACTICAL TRAINING IS REQUIRED.

BLAST HOSE PRESSURE TESTING

HYPERDERMIC NEEDLE GAUGE



**INSERT NEEDLE IN TO BLAST HOSE AT AN
ANGLE OF 45 DEG WITH AIR FLOWING.**

NO GRIT FLOWING!!

**NEEDLE MUST POINT TOWARDS THE
NOZZLE.**

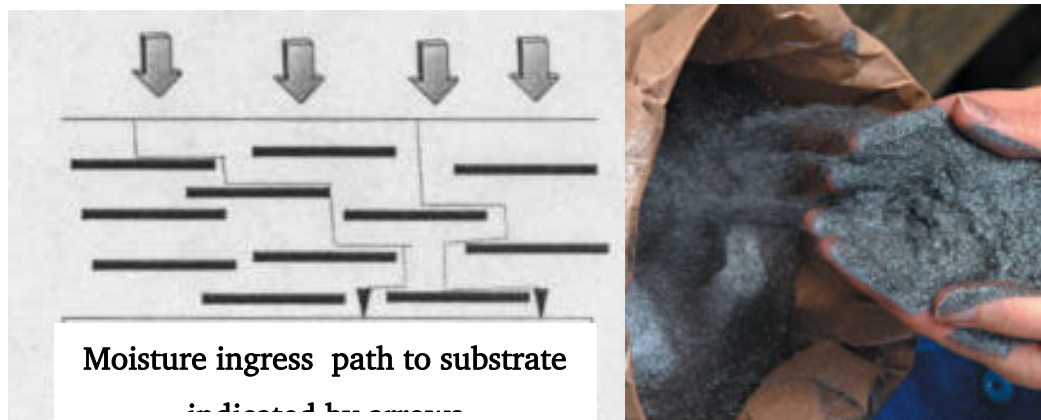
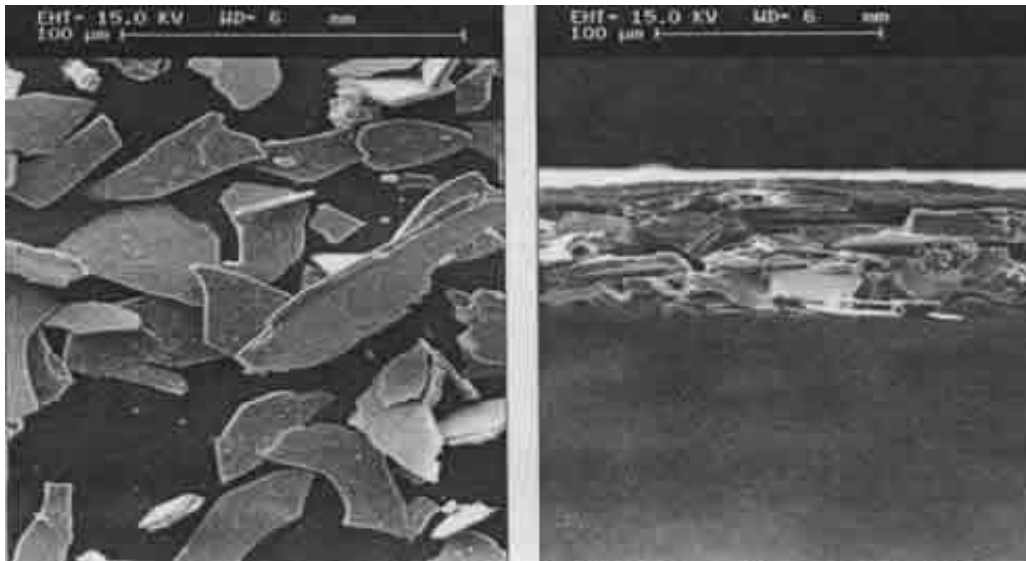
READ THE PRESSURE ON THE GAUGE.

SAFETY – SAFETY - SAFETY

IMPORTANT PIGMENT.

MICACEOUS IRON OXIDE

Micaceous hematite, Natural lamellar hematite, Specular iron oxide, Micaceous iron oxide, Natural specular hematite ore – **is MAGNETIC and has an effect on DFT readings taken with Magnetic Dry Film thickness gauges.**



Micaceous Iron Oxide comes from a variety of places, is processed to remove impurities and then by drying, grinding and sieving is refined to produce a grey material with a metallic sheen and a lamellar structure. It is this lamellar structure combined with exactly the right particle size distribution which enables it to be used as a pigment in paints.

MIO is a naturally occurring lamellar (plate like) form of ferrous oxide, Fe_2O_3

MECHANICAL CLEANING TOOLS.

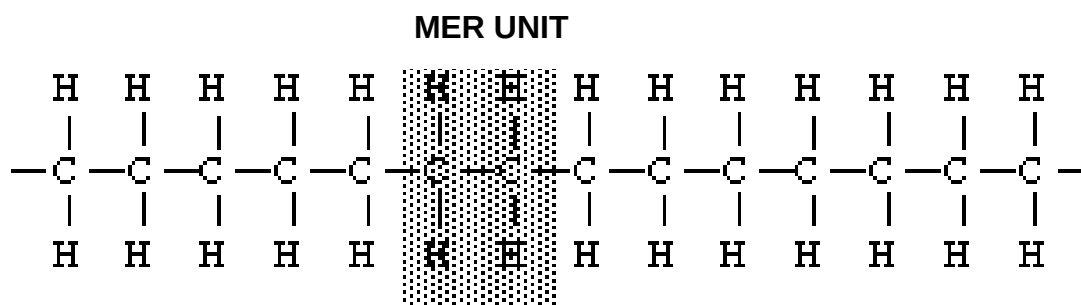


Top : Chisel Gun Bottom: Needle Gun

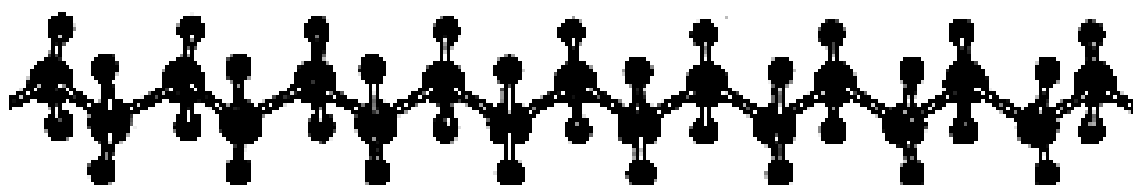
Caution: Both lead to very high surface profile.

POLYMERS & POLYMERISATION

Within each molecule, the atoms are bound together by covalent bonds. For most polymers, these molecules are in the form of long and flexible chains in which a string of carbon atoms constitutes the backbone. Furthermore, these long molecules are composed of structural entities called mer units, which are repeated along the chain. A single mer is called a **monomer**, and **the term polymer means many mer units**. As an illustration, a mer unit and the zigzag backbone structure of polyethylene are shown below.



(a)



(b)

Picture is of polyethylene. (a) The "mer" and chain structure of carbon and hydrogen atoms. (b) A perspective view of the molecule, showing the zigzag backbone structure.

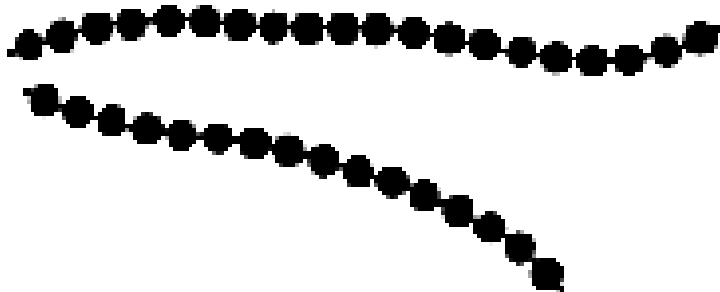
**IN PAINTING, POLYMERISATION IS THE
PROCESS PAINT GOES THROUGH TO FORM
THE DRY PAINT FILM**

POLYMERS & POLYMERISATION

By using different starting materials and processing techniques, we can produce polymers having different molecular structures. As illustrated in below, these structures can be classified into 3 different categories:

- (i) **LINEAR**
- (ii) **BRANCHED**
- (iii) **CROSSLINKED**

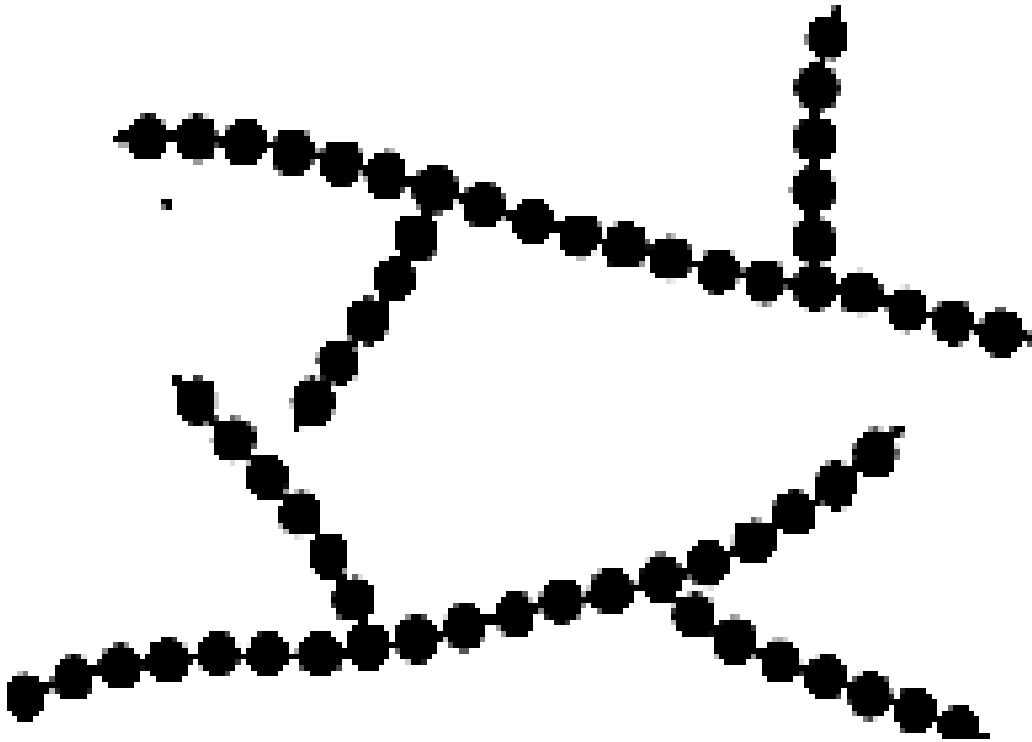
In linear polymers, the mers are joined together end to end in single chains. The long chains are flexible and may be considered as a mass of spaghetti. Extensive van der Waals bonding between the chains exist in these polymers. Some of the common linear polymers are polyethylene, polyvinyl chloride, polystyrene, nylon and the fluorocarbons.



LINEAR POLYMER

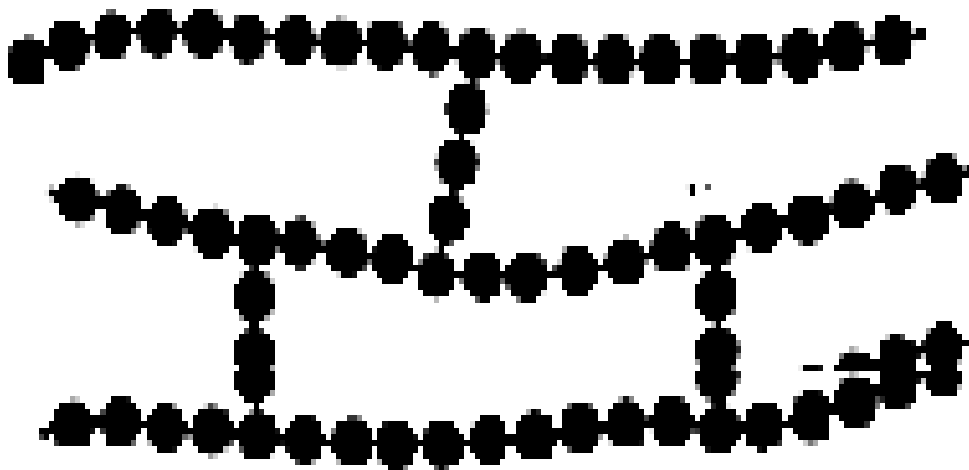
POLYMERS & POLYMERISATION

Polymers may also have a molecular structure in which side-branch chains are connected to the main ones. These polymers are called **branched polymers**. The branches result from side reactions that occur during the synthesis of the polymer. The formation of side branches reduces the chain packing efficiency, resulting in a lowering of the polymer density.



BRANCHED POLYMER

POLYMERS & POLYMERISATION



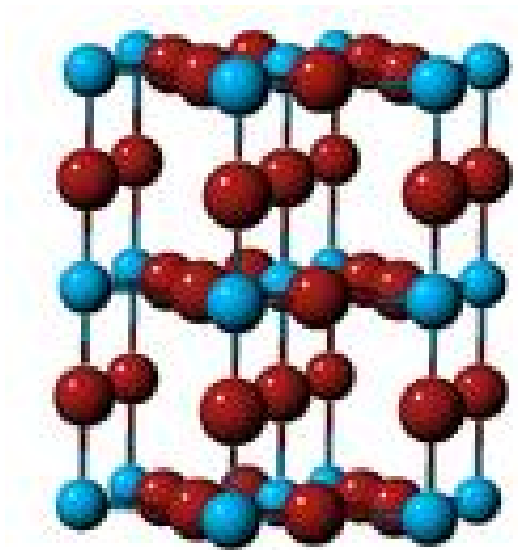
In **crosslinked polymers** , adjacent linear chains are joined to one and another at various positions along their lengths as shown. Generally, crosslinking is accomplished by additive atoms or molecules that are covalently bonded to the chains.

Crosslinked polymers are the strongest.

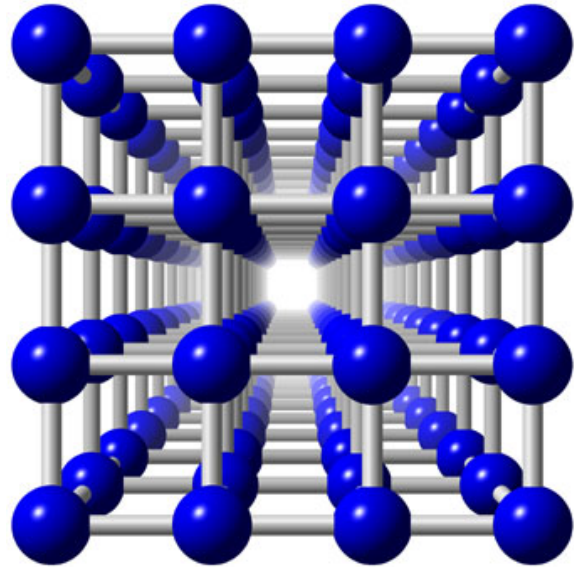
CROSSLINKED POLYMER

POLYMERS & POLYMERISATION

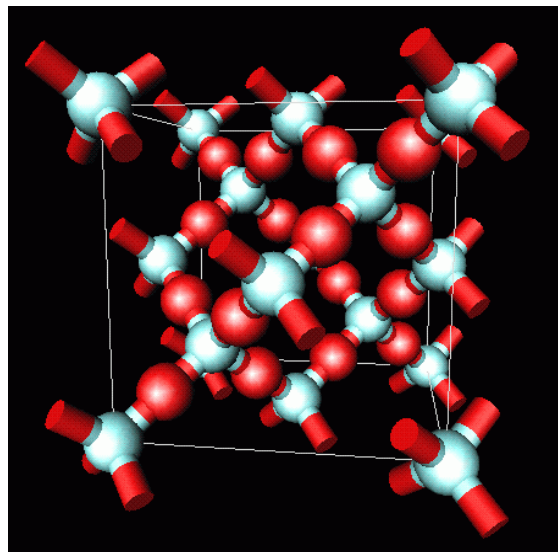
PLOYMERS ARE IN 3 DIMENSIONAL FORM



LINEAR



BRANCHED



CROSSLINKED

Surface Testing Potassium Ferricyanide



The Blue colouring shows the presence of Fe (Iron) Salt contamination. Potassium Ferricyanide Test Kit

Simply spray a solution from the aerosol supplied onto the blasted steel and then place a Potassium Ferricyanide Test Paper onto this location for 5 seconds.

If the test paper has blue specks then there is Fe salt contamination.

MECHANICAL CLEANING TOOLS.

POWER BRUSHES



Power brushes come in many varieties and sizes.

2 points to remember:

A) If over used they **BURNISH** the substrate, which means they polish it.

B) Needles always come out of the brushes at high speed due to use and centrifugal force and they are very dangerous.

SAFETY – SAFETY – SAFETY - SAFETY

BS 7079 Part A

ISO 8501, SS 05 59 00

RUST GRADES

RUST GRADE A

***STEEL SURFACE LARGELY COVERED WITH
ADHERENT MILLSCALE WITH LITTLE IF ANY
RUST.***





Virtually intact (blue) millscale

BS 7079 Part A

ISO 8501, SS 05 59 00

RUST GRADES

RUST GRADE B

***STEEL SURFACE, WHICH HAS BEGUN TO
RUST AND FROM WHICH MILLSCALE HAS
BEGUN TO FLAKE.***





Untreated millscale 12 months exposure

BS 7079 Part A

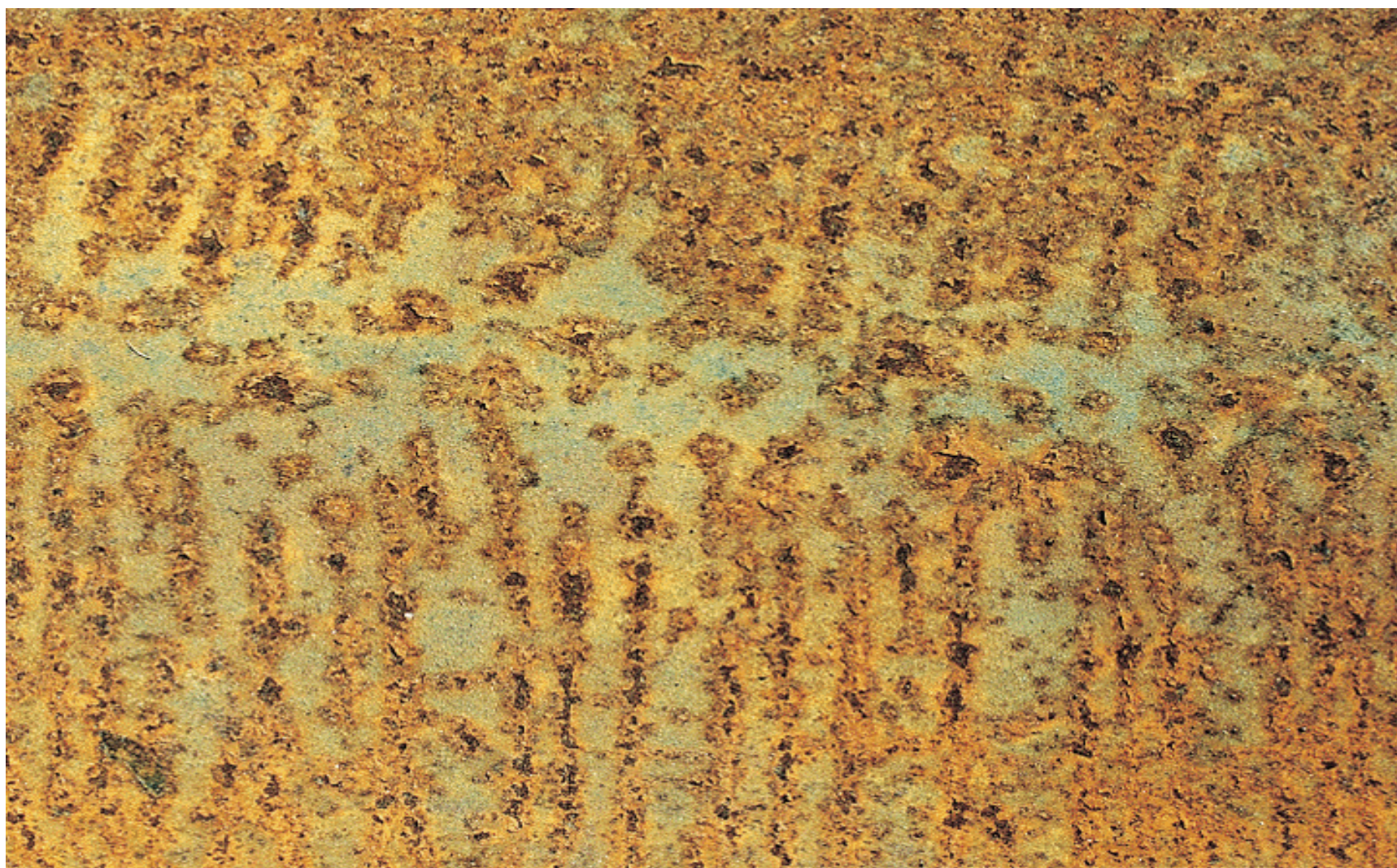
ISO 8501, SS 05 59 00

RUST GRADES

RUST GRADE C

***STEEL SURFACE, ON WHICH THE MILLSCALE
HAS RUSTED AWAY OR FROM WHICH IT
CAN BE SCRAPPED, BUT WITH SLIGHT
PITTING VISIBLE UNDER NORMAL VISION.***





Untreated millscale 36 months exposure

BS 7079 Part A

ISO 8501, SS 05 59 00

RUST GRADES

RUST GRADE D

***STEEL SURFACE, ON WHICH THE MILLSCALE
HAS RUSTED AWAY AND ON WHICH
GENERAL PITTING IS VISIBLE UNDER
NORMAL VISION.***





Untreated millscale 8 years exposure

SURFACE TESTING
THE SILVER NITRATE TEST
TESTING FOR SOLUBLE CHLORIDE SALTS



Contents

Bottle of reagent, test tubes, wooden spatulas, plastic dropper, distilled water and spray bottle.

Method

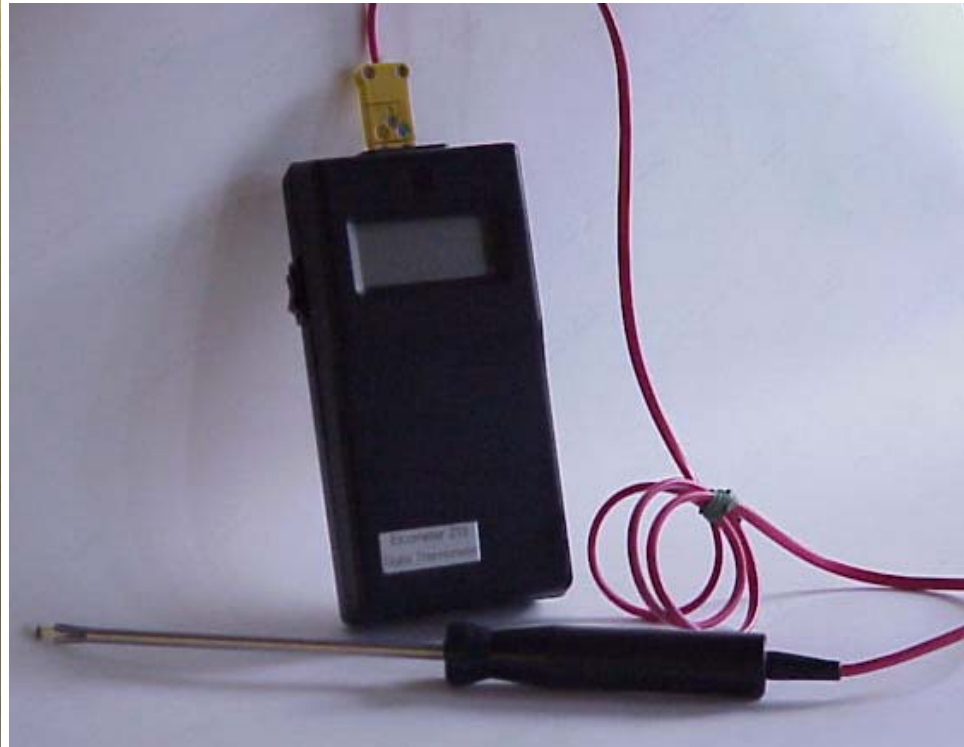
Test purity of the distilled water. Spray approximately 20ml distilled water onto surface of steel. Collect run off into test tube. Fill test tube to approximately $\frac{3}{4}$ full. Add 4 drops of reagent. The presence of soluble chlorides will show up as a white precipitate.

Limitations

Provides a stop/go indication only. Does not provide quantifiable results.

PAINING INSPECTION

MAGNETIC TEMPERATURE GAUGE, LIMPET GAUGE



The air temperature (ambient) is the temperature recorded from the dry bulb thermometer. To measure the steel substrate temperature a magnetic gauge, known commonly as a limpet gauge is used, or a digital thermometer, thermocouple, sometimes called a touch pyrometer. Limpet Gauge **must be in contact with the substrate** for at least 15 minutes and **not in direct sunlight**.

SURFACE PROFILE MEASUREMENT.

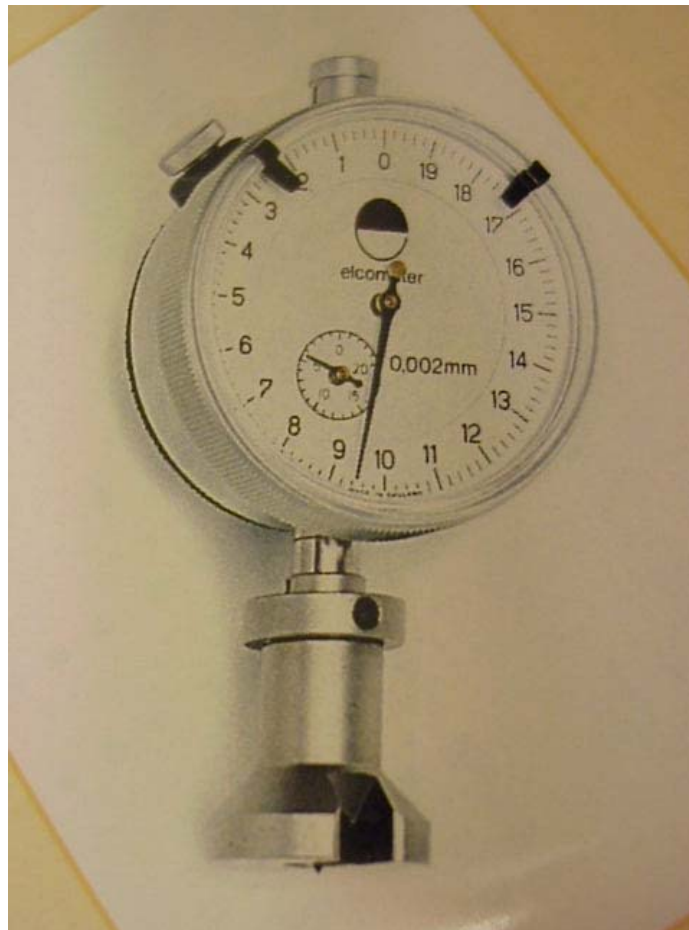
DIAL MICROMETER



**TO CALIBRATE: CLEAN ANVILS &
ENSURE DIAL IS SET TO ZERO, LOCK THE DIAL.
REPLICA TAPE TO BE USED AS INSTRUCTED.
PLACE TAPE BETWEEN ANVILS AND READ
MEASUREMENT, DEDUCT THICKNESS OF TAPE
TO OBTAIN SURFACE PROFILE READING.**

SURFACE PROFILE MEASUREMENT.

NEEDLE GAUGE



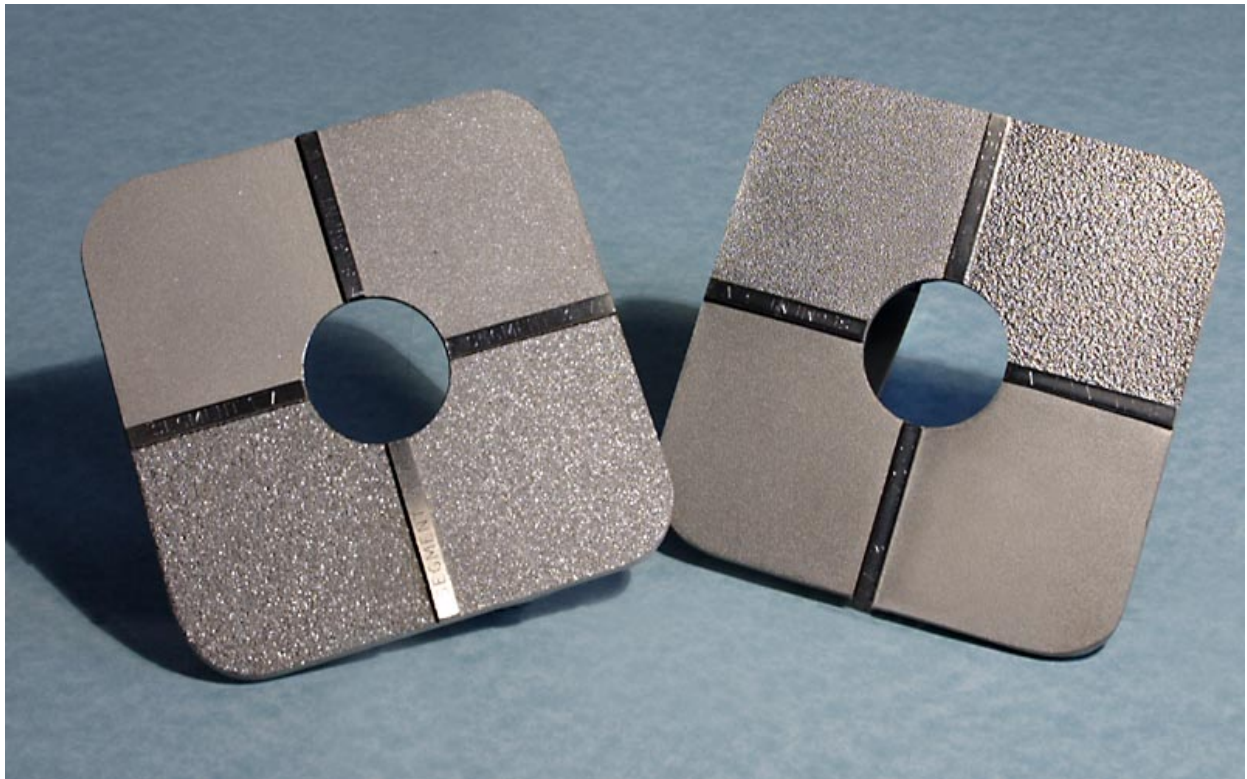
CALIBRATE ON FLAT GLASS.

ENSURE DIAL IS SET TO ZERO.

**TAKE MINIMUM OF 10 READINGS AND
CALCULATE AVERAGE.**

SURFACE PROFILE MEASUREMENT.

SURFACE PROFILE COMPARATOR



**PLACE ON SUBSTRATE AND ASSESS THE
SUBSTRATE IN COMPARISON TO SEGMENTS.**

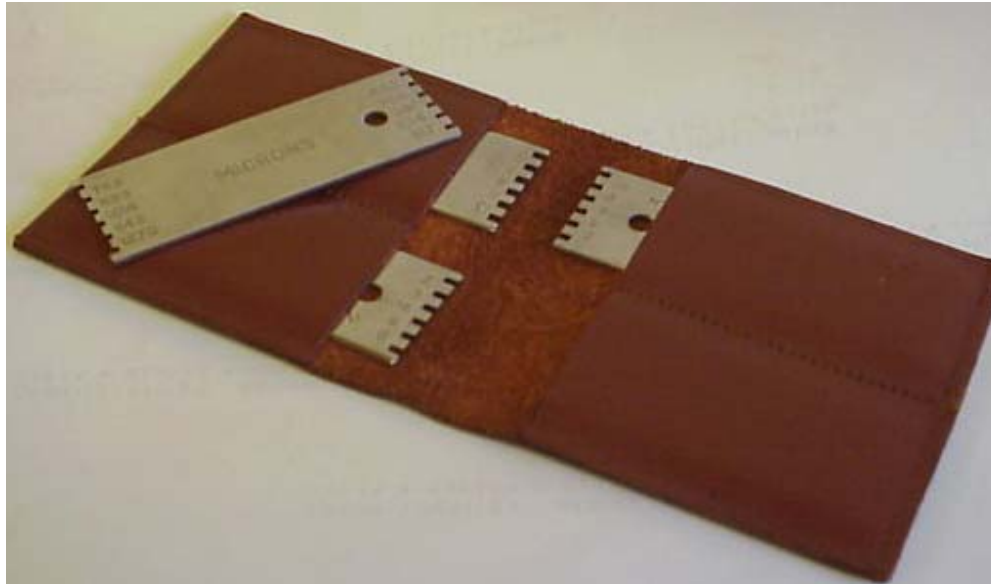
ENSURE YOU USE CORRECT TYPE.

THE 2 TYPES ARE FOR SHOT AND GRIT.

**THE GRIT COMPARATOR MAY BE USED FOR
SHOT/GRIT MIXTURE.**

PAINTING INSPECTION

WET FILM COMB GAUGES



TO USE

IMMEDIATELY AFTER APPLICATION OF PAINT DIP END OF GAUGE IN TO WET FILM ENSURING BOTH END FEET ARE AT THE SURFACE OF THE SUBSTRATE OR PRECEDING COAT. REMOVE AND LOOK AT THE TEETH TO SEE WHICH ARE COVERED WITH WET PAINT. SOME WILL BE FULLY COVERED AND SOME PARTIALLY, THE READING IS RECODED AS THE WET FILM IS "BETWEEN".

SPRAYERS SHOULD BE COMPLETING THIS AS THEY SPRAY TO ENSURE THEY HAVE APPLIED SUFFICIENT PAINT, IF THEY HAVE NOT THEY CAN APPLY MORE AT THAT TIME.