

# elcometer 141 Paint Inspection Gauge

Can be used in accordance with:

**ISO 2808-5B**

**ASTM D 4138**

**BS EN 3900-CS-5B**

Destructive **thickness measurement** is not only often the only guaranteed method available to test certain coating / substrate combinations such as **paint applied to Concrete, Wood, Plaster, Steel, Wood etc**, but also the only method to identify **thicknesses of each individual layer** of a multi-layer coating system.



The Elcometer 141 PIG offers a quick, versatile method of coating examination and measurement in a portable, easy to use instrument. Ergonomically designed to give a balanced weight distribution for a more consistent cut.

This versatile instrument can easily be converted into a Cross Hatch Cutter for users wishing to also perform adhesion tests. See Elcometer 107 Cross Hatch Cutter.

The Elcometer 141P.I.G. is a destructive coating thickness test that uses the principle of trigonometry to measure the width of a cut which is measured using the graticule scale in a microscope.

## Features

- **Balanced weight distribution and hard wearing rollers for a more consistent cut**
- **Tungsten Carbide Blades for extended life**
- Large easy to grip handle - allows the operator to cut thick or hard coatings easily
- Internal cutter storage compartment
- x50 magnification direct measurement **microscope** with Graticule (Graduated)
- **Low cost (supercedes the Elcometer 121 at half the price)**
- **2-in-1 P.I.G. (141) and Cross Hatch Cutter (107)** (Adhesion) for users who perform both types of test
- Left or right hand operation

## Technical Specifications - Elcometer 141 Paint Inspection Gauge (PIG)

Scale Range (Maximum)	2mm		
Overall Dimensions (Fitted to handle)	160 x 100 x 35mm		
Material	Aluminium Construction		
Weight (Fitted to handle)	510g		
Microscope	x50 Magnification with scale		
<b>Cutting Tips :</b>			
Material	Tungsten Carbide		
Cutter Number	No 1	No 4	No 6
Cutter Part Numbers	T14115761-1	T14115761-4	T14115761-6
Cutting Angle	45°	26.6°	5.7°
Graticule Scale Factor (microns/division)	20	10	2
Measuring Thickness Range (Microns)	20 - 2000	10 - 1000	2 - 200
Measurement Tolerances	+/- 5 microns	+/- 2.5 microns	+/- 0.5 microns
Shipping List	PIG, Microscope, Marker Pen, Allen Key, 3 cutters (Nos 1, 4, & 6) Instructions, Carry Case		

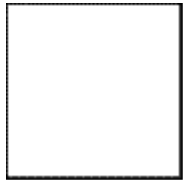


## Test Method - Elcometer Paint Inspection Gauge

The PIG test method is a destructive test to measure the thickness of a coating which is over certain coating/substrate combinations and to also measure individual layers of a multi-layer coating system.

### Procedure

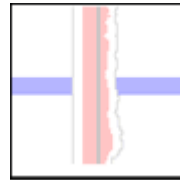
The surface (or test panel) under examination is marked with one stroke from the Koki / Felt marker pen. Then a cut is made at right – angles to this mark and the coating examined through the 50 x's graduated microscope. The blade cuts one “clean” edge (at (1) above) and one ragged edge (at (3) above) ie “substrate edge”. The thickness of each layer is measured from the “clean” edge at (1) to (2) & total thickness from (1) to (3). See the diagrams below.



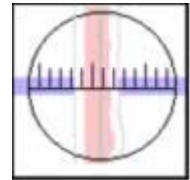
Take the coated product



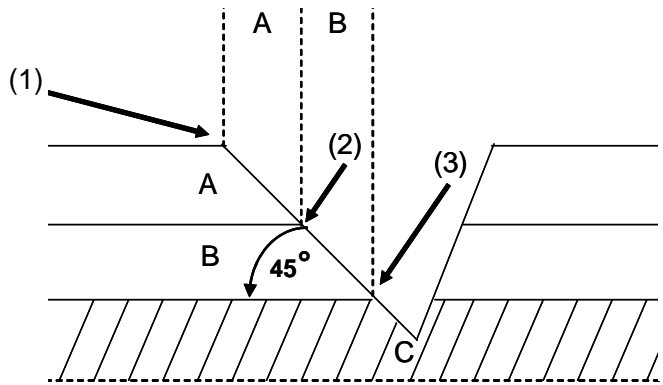
Using the marker, mark a line across the coating



Using the PIG, make a cut at right angles to the marker line, all the way down to the substrate

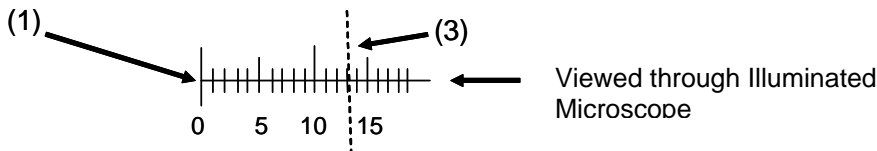


Using the microscope, measure the number of graticule divisions across a coating layer, using the sharp cut



A = Topcoat  
B = Undercoat  
C = Substrate

(1) = Marker Pen / Koki  
(2) = Paint Line  
(3) = Ragged Edge



Using the Scale factor (number of microns per division, calculate the coating thickness)

eg	No 1 Blade	13 divisions	x 20	= 260 mic
	No 4 “	13 “	x 10	= 130 mic
	No 6 “	13 “	x 2	= 26 mic

From the appearance of the cut, Adhesion, Elasticity of the coating, Cleanliness of the substrate, and Adhesion of each separate coating can also be determined.

- NOTE :**
- 1) All images, when looking through the Microscope are reversed
  - 2) The 141 replaces the old 121 at a much lower price. The 121 has **paid for itself** many times over for both authorities below & Paint Manufactures etc.

## MAJOR USERS of the superceded model 121 (PIG or “V” Cutter)

**PUBLIC WORKS, POST OFFICE, PLASCON, DULUX all use the 121 to measure PVA & Coatings on Plaster, Concrete, Wood, Asbestos etc**

**The MOTOR ASSEMBLERS measure PAINT on SAMPLES of PLASTIC HUB CAPS & BUMPERS PASSED THRO’ THE PAINT BOOTH**



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