

# elcometer® 121/4 Standard & Top Paint Inspection Gauges

Can be used in accordance with:  
**ISO 2808-5B, 6B, ISO 16276-2, ISO 2409**  
 AS 1580.108.2, AS 1580.408.4, AS 3894.9, ASTM D 3359-B, ASTM D 4138-A,  
 BS 3900-C5-5B, DIN 50986, ECCA T6 NF T30-123, EN 13523-6, NF T30-038



## At a glance:

- **Destructive coating thickness gauge used to measure multi-layer coatings**
- **Perform hardness and cross hatch adhesion tests with a single gauge – top unit only**

Available in two models, the Elcometer 121 is designed to measure the thickness of single or multiple layers of coatings on virtually all substrate types including wood, plastic and metal.

The Top model has an integrated rotary tool holder which accommodates three standard cutters and one cross hatch cutter.

Both models are supplied with an illuminated, integrated graticule, x50 microscope.

## Features

- **Lightweight and Compact:**
  - Easy to use in confined areas.
- **Rugged and durable:**
  - Made from anodised aluminium for durability.
- **Bright LED light source:**
  - Ensuring clear vision through the integrated microscope.
- **Versatile:**
  - Can be used as a paint inspection gauge or cross hatch adhesion tester\*. (*Elcometer 121/4 Top Model Only*)

## Technical Specifications

	Elcometer 121/4 Standard	Elcometer 121/4 Top
<b>Range</b>	2 - 2000µm - Dependent on cutter used	
<b>Accuracy</b>	Dependent on tool cut angle, half a division	
<b>Dimensions</b>	110 x 75 x 30mm	110 x 75 x 40mm
<b>Weight</b>	369g	383g



## Packing list

- Elcometer 121-4 Standard or Top P.I.G, 1, 4 and 6 cutters
- integral x50 microscope
- AG3 batteries (x4) for lamp - fitted
- 3.0mm hexagonal wrench
- black marker pen
- wrist strap
- carry case
- operating instructions

## Part Numbers

### Replacement P.I.G. Cutters (Tungsten Carbide)

Description	Cutting Angle	Practical Maximum Thickness* ( $\mu\text{m}$ )	Graticule Scale Factor ( $\mu\text{m}$ )	Part Number
Cutter No 1	45°	1600	20	T99915761-1
Cutter No 4	26.6°	800	10	T99915761-4
Cutter No 6	5.7°	160	2	T99915761-6

\* Based on using 80% of cutter width

### Cross Hatch Cutters (Top Model Only)

Coating Thickness	Substrate Type	Teeth	Spacing	Test Method	Part Number
0 - 50 $\mu\text{m}$	Metal	11	1mm	ASTM D3359B	T10713700-2
0 - 60 $\mu\text{m}$	Hard	6	1mm	BS EN ISO 2409	T10713700-1
0 - 60 $\mu\text{m}$	Medium	11	1.5mm	-	T10713700-3
0 - 60 $\mu\text{m}$	Soft	6	2mm	BS EN ISO 2409	T10713700-4
50 - 125 $\mu\text{m}$	Hard and Soft	6	2mm	ASTM D3559B	T10713700-4
61 - 120 $\mu\text{m}$	Hard and Soft	6	2mm	BS EN ISO 2409	T10713700-4
125 - 250 $\mu\text{m}$	Hard and Soft	6	3mm	Quick Check Only	T10713700-5

### Elcometer 121/4 PIG

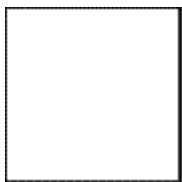
Model	Description	Part Number
Elcometer 121/4	Elcometer 121/4 Standard PIG, Metric	A121---SM
	Elcometer 121/4 Top PIG, Metric	A121---TM
<b>Spares / Accessories</b>	Carry Case	T12121191
	Allen Key, 2.5mm	T9996287-
	Black Marker Pen	T1214434-
	LED Torch	T12121158

## Test Method - Elcometer Paint Inspection Gauge

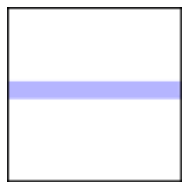
The PIG test method is a destructive test to measure the thickness of a coating which is over certain coating/substrate combinations and to also measure individual layers of a multi-layer coating system.

### Procedure

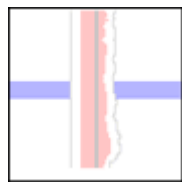
The surface (or test panel) under examination is marked with one stroke from the Koki / Felt marker pen. Then a cut is made at right – angles to this mark and the coating examined through the 50 x's graduated microscope. The blade cuts one "clean" edge (at (1) above) and one ragged edge (at (3) above) 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.



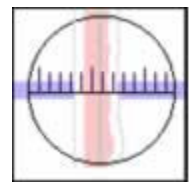
Take the coated product



Using the marker, mark a line across the coating

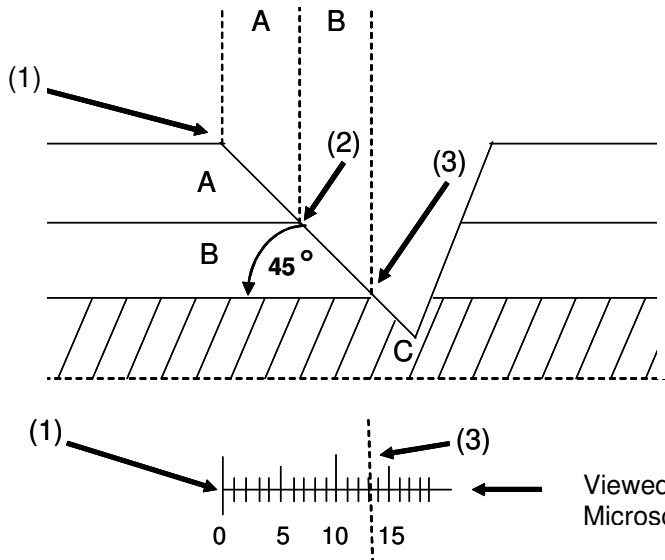


Using the PIG, make a cut at right angles to the marker line, all the way down to the substrate



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

**Diagrammatic Example**



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 121 has **paid for itself** many times over for both authorities below & Paint Manufactures etc.

**Major Users of the model 121 and 141 (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**