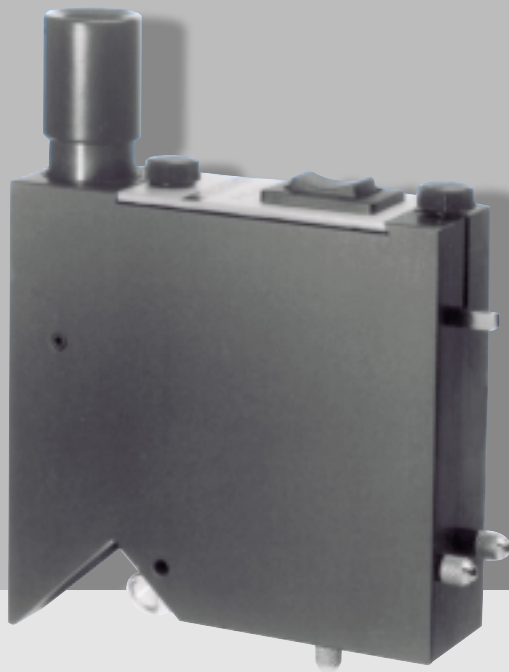


Coating thickness measuring instrument

P.I.G. Model 455



Paint Inspection Gauge

- ISO 2808
- ASTM D 4138
- DIN 50 986
- AS 1580 Method 408.1

P.I.G. 455 a small measuring instrument with a large capability

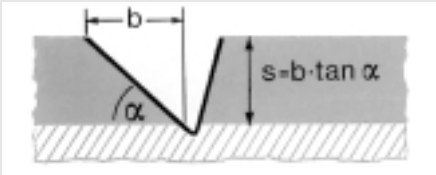
Paint Inspection Gauge Model 455

Measurement of layer thickness on all base materials

Measuring the thickness of layers presents problems which frequently cannot be resolved with electronic measuring instruments. These problems arise in the first instance in the measurement of coatings of paint and similar layers on wood, concrete, plastic and other non metallic surfaces. On the other hand, the P.I.G. 455 which is based on the standardised wedge cut method can be used to measure all coatings on all base materials equally well. In addition to this, the P.I.G. 455 can analyse the make up of a multi layer coating.

Principle of test

A carbide cutting tool with defined angle of cut is used to cut through the layer to be measured, down onto the base material. The resulting angular groove exposes the structure of the layer. The thickness of the coating (s) is calculated from the projected dimensions (b) of the cut face, which is evaluated with a measuring microscope, and the cutting angle (α).



In adhesion tests acc. to AS 1580 Method 408.1, the width of the area where the coating has stripped off during the cutting operation, is related to the projection b .

Description

The P.I.G. 455 consists of an anodised aluminium block which houses all equipment for the required operation: an exchangeable carbide tip is fixed in such a way that this, in conjunction with two support pins fitted on the same side face, will make up a 3 point support. The arrangement ensures controlled guiding for the cutting operation.

The scale of the measuring microscope which has a magnification factor of 50 is provided with 100 divisions. For optimum evaluation of the wedge cut an adjusted lamp is incorporated, driven by two built in batteries.

For different coating thickness ranges various carbide tips as listed in the table are available. The standard version is the P.I.G. 455 with tip No. 6.



The basic instrument is supplied in a sturdy leather case which provides adequate protection for the P.I.G. under rough conditions in the field.

Measuring procedure

It has been found convenient to mark the face before making the cut by means of a felt tip pen, as this makes the upper edge of the cut more clearly visible. A straight cut is then made through the mark in such a way that the blade clearly exposes the base material. The projected length of the cut face is evaluated with the measuring microscope and the required coating thickness in the measuring position is then obtained by multiplying by the respective conversion factor.

If there is sufficient contrast in colour between the individual layers, the P.I.G. can also be used to examine these individually. In addition to this, the appearance of the wedge cut provides information concerning the adhesion and elasticity of the coating material, the cleanliness of the base material and also the adhesion between the individual layers.

Technical data

Carbide tip:	No. 1	No. 4	No. 5	No. 6
Range (μm):	20–2,000	10–1,000	5–500	2–200
Cutting angle α :	45°	26.6°	14°	5.7°
Factor ($\mu\text{m}/\text{sc.div.}$):	20	10	5	2
Measuring accuracy:	1 %			
Batteries:	2 'Mignon'			
Dimensions:	110 mm x 85 mm x 25 mm			
Net weight:	400 g			

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