

Pfund Cryptometer



The Pfund Cryptometer offers a simple and accurate method to test wet film hiding power or determine thickness needed for complete opacity. It can give an estimate of coverage in square metres per litre and is suitable for use with coatings containing pigments.

The Pfund Cryptometer consists of a glass plate, half black half white as the base. Each half of this base has a scale engraved from 0-50mm along one edge starting from the division in the centre. Two glass top plates are included with each instrument, and these have two metal supports at one end so that these transparent top plates rest at an angle when placed upon the black and white area of the base plate. The top plates differ in the length of their tiny supports so that different angles are formed between the top plates and the base plate. A wedge angle constant (K) is given to each top plate. These range from the smallest angle $K=0.002$ to $K=0.0035$, $K=0.004$, $K=0.007$ and the largest $K=0.008$, the popular constants being $K=0.004$ and $K=0.008$.

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Key Features

Reflectance of white part: 80 ± 2

Reflectance of black part: ≤ 2

Two glass plates included as standard K-0.004 & K-0.008 Weight: 1.0 Kg

Dimensions: 100 mm x 170mm x20mm (L×W×H)

Product Code	Description
T01-60811	Pfund Cryptometer
T01-60812	Glass Plate (K=0.002)
T01-60814	Glass Plate (K=0.004)
T01-60815	Glass Plate (K=0.007)
T01-60816	Glass Plate (K=0.008)

Method

The appropriate top plate for the paint to be tested is selected, usually K=.008 for light coloured paints and K=.004 for dark coloured paints. (Alternatively, K= 0.002 for higher opacity coatings and K= 0.007 for less opaque coatings). A blob of paint, typically 3-5 ml is placed in the centre of the base plate close to the black/white division.

For light colours, the top plate (e.g., K= .008) is placed over the paint with the supports on the white area of the tile.

The top plate is pressed down firmly so that the paint is spread without air bubbles to form a shallow wedge between the plates. This wedge will move with the top plate, the position of which is adjusted until the moment that the black/white division disappears.

The scale reading is then noted from the black scale where the edge of the top plate contacts the base plate. When testing a dark coloured paint, the top plate (e.g. K= .004) is used and the scale reading taken on the white area.

The thickness of paint in mm over the black and white division is obtained by multiplying the scale reading times the wedge constant K of the top plate used. This records the minimum film thickness necessary to obscure the black and white. The coverage or spreading power for this thickness can be obtained directly from the conversion tables below for each of the top plates.

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Coverage in Square Metres per Litre

K=0.004

	0	1	2	3	4	5	6	7	8	9
0	--	--	--	--	--	50.00	41.60	35.60	31.60	27.70
10	25.00	22.70	20.60	19.20	17.80	16.60	15.60	14.70	13.90	13.10
20	12.50	11.90	11.30	10.90	10.40	10.00	9.60	9.25	8.90	8.60
30	8.33	8.05	7.80	7.55	7.30	7.10	6.92	6.74	6.66	6.40
40	6.24	6.08	5.94	5.80	5.66	5.55	5.42	5.30	5.20	5.10

K=0.008

	0	1	2	3	4	5	6	7	8	9
0	--	--	--	--	--	25.00	20.60	17.80	15.60	13.90
10	12.50	11.30	10.40	9.60	8.90	8.33	7.80	7.30	6.92	6.66
20	6.24	5.94	5.66	5.42	5.20	5.00	4.80	4.63	4.47	4.30
30	4.16	4.02	3.690	3.77	3.65	3.55	3.45	3.36	3.28	3.20
40	3.12	3.04	2.96	2.90	2.84	2.78	2.71	2.65	2.59	2.55

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