

TCG-analog

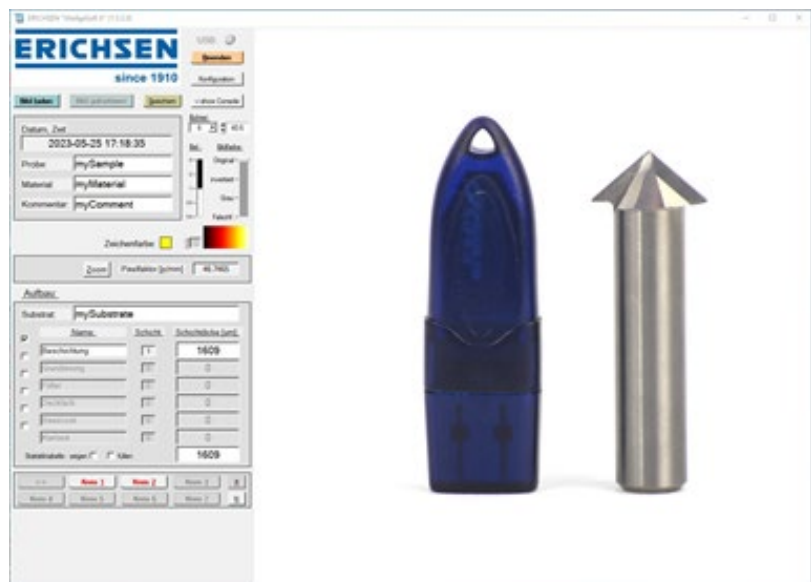
Layer thickness
measurement
per scaled magnifier

PAINT BORER TCG (Thick Coat Gauge)



TCG-digital

Layer thickness
measurement
with digital
evaluation
"WedgeSoft X"



testing equipment for quality management

ERICHSEN
since 1910

Technical Description

Thickness measurement
of all coatings on any
substrate
Measurement of
individual layers of a
multi-layer coating

Layer thickness
measurement
for layer thicknesses
up to 6000 µm

PAINT BORER TCG (Thick Coat Gauge)

Layer thickness measurement for "thick layers" up to 6000 µm, via defined drilling through the layer(s) to be measured; optionally with analogue (via scaled magnifier) or digital evaluation (via software).

Purpose and Application

The measurement of thick layers over 2000 µm on non-metallic substrates (concrete, plaster, screed, wood, plastic etc. ...) is a potential technical, possibly also financial challenge for the user.

Reliable non-destructive methods on non-metallic substrates, often cause a distinct price and require uncomfortable calibration.

The destructive measurement by means of a simplified wedge cut method by means of punctual (and, if necessary, easily repaired) damage to the "thick" layer, offers, in addition to the uncomplicated application, a significantly more favourable and welcome alternative for many users.

The Measuring Principle

The **PAINT BORER TCG** works according to the standardised wedge cut method, in which the sample is drilled at a defined angle.

As an independent alternative to the established **Paint Borer 518 MC/USB**, which is suitable for layer thicknesses up to 2000 µm with its integrated drilling unit and microscope, the **PAINT BORER TCG** offers a **measuring range of up to 6000 µm**, which is three times higher in comparison and also suitable for explicit "thick layers".

Two options are available for reading/evaluation:

1. **Illuminated magnifier** with scale in 0.1 mm resolution (with a wedge cut angle of 36.9° on which the conversion is based, this results in a value of 75 µm per scaled graduation mark).
2. **Software "WedgeSoft X"**, for importing and for processing separately taken images (from digital microscope, smartphone or tablet).

The Measuring Device

The scope of delivery of the **PAINT BORER TCG** includes either:

- Special drill with 36.9° wedge cut angle, as well as an illuminated magnifier with scale in 0.1 mm resolution (= circumference **PAINT BORER TCG "analogue"**).



- Special drill with 36.9° wedge cut angle, as well as software "WedgeSoft X", for importing and for processing separately taken images (from e.g. digital microscope, smartphone, or tablet) (= scope **PAINT BORER TCG "digital"**).



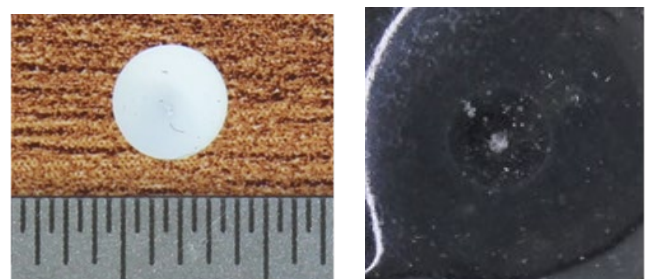
A suitable drilling unit and the imaging medium (e.g. smartphone, digital microscope...) are to be provided by the user.

The Operation

The special drill has a shank diameter of 10 mm (suitable for most common drilling machines).



Drill at an appropriately low speed (if necessary, optimise individually according to the result achieved) as vertically as possible through the layer to be measured until the substrate is visibly (possibly noticeably) reached during drilling; especially with mineral substrates, do **NOT drill** clearly into the substrate.

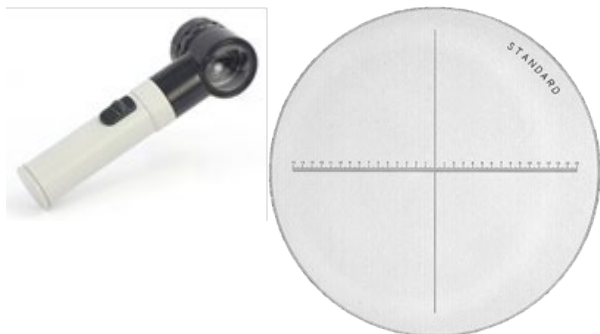


If necessary, the vertical guidance of the drilling unit can also be optimised by using a lever-operated lifting and lowering drill stand (to be provided by the user).

The reading/evaluation takes place:

- **By magnifier:**

By aligning the scale accordingly, measuring the obliquely drilled layer; distance from substrate to upper edge, reading the graduation lines; the layer thickness results from multiplying the graduation lines by the **scale factor assigned to the wedge cut angle**.

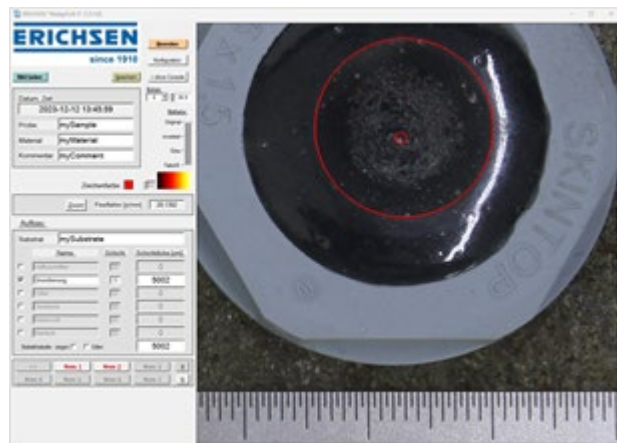


- **Per software "WedgeSoft X":**

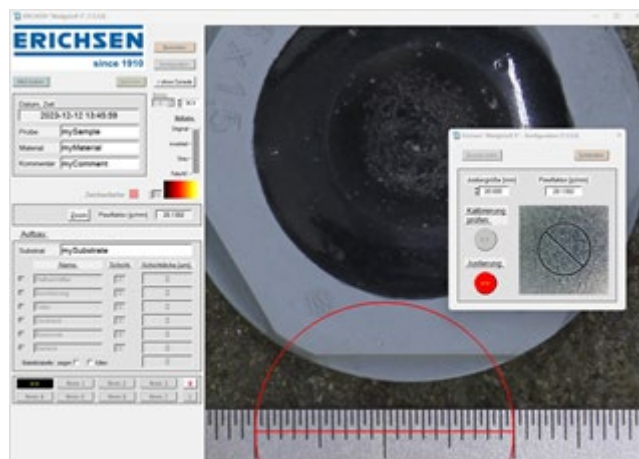
The software is activated by inserting the security dongle into the computer.



After loading the image to be measured, the relevant image section is first selected. An already known pixel factor in pixels/mm can now be entered in the configuration window. Alternatively, the software can be adjusted using a scale placed next to the hole (e.g. a calibrated steel ruler).



Contrast lines are now positioned by cursor, i.e. at the transition contrast from substrate to coating, as well as at the upper edge of the coating.



The software automatically calculates the layer thickness after entering the wedge cut angle.

Several (up to 6) layers can also be marked and measured simultaneously.



Ordering information		
Figure	Order no.	Product description
	03350131	PAINT BORER TCG "analogue" Special drill with 36.9° wedge cut angle, as well as an illuminated magnifier (incl. certificate) with scale in 0.1 mm resolution
	03350231	PAINT BORER TCG "digital" Special drill with 36.9° wedge cut angle, as well as Software "WedgeSoft X", for importing and processing of separately recorded images (from digital microscope, smartphone or tablet)
	03350431	Special drill TCG with 36.9° wedge cut angle (shaft diameter 10 mm)
	16330132	Illuminated magnifier with scale in 0.1 mm resolution, incl. certificate
	03350331	Software "WedgeSoft X" for importing and for processing images taken separately (from digital microscope, smartphone or tablet).
	16300032	<u>Manufacturer's test certificate M</u> according to DIN 55 350, part 18, incl. cost for examination and calibration/re-calibration for Special Drill TCG

Subject to technical changes.
TBE/TCG – XII//2023