

Using the Auto Calibration feature of the Elcometer 456 Coating Thickness Gauge

The Elcometer 456 Dry Film Thickness Gauge can accurately measure the thickness of a coating on smooth, and on rough or blast coated substrates.

If you are regularly measuring coatings that have been applied to the same target thickness, and on the same substrate material, then you can save time using the Elcometer 456's Auto Calibration mode.

Auto Calibration provides rapid, error-free, on-site calibration, by allowing you to enter the foil thickness values you regularly use to calibrate, once – so you don't have to adjust the values manually every time you calibrate.

Whether calibrating for use on smooth or on rough, blast coated surfaces; Auto Calibration can help save you time without compromising on accuracy.

Compared to the smooth or rough calibration procedures, Auto Calibration allows you to follow the same steps, but without having to adjust the foil thickness or zero values on the gauge; allowing you to spend less time calibrating, and more time inspecting.

To set up Auto Calibration, press the "Cal" softkey. Highlight "Cal Method" using the up and down soft keys, and press the "Select" softkey. Then highlight and select "Auto". Now you can enter the foil thickness values you regularly use to calibrate your gauge.

First, press the "High" softkey, and enter the thickest foil value you use to calibrate, using the up and down soft keys - pressing and holding a key down will change the values rapidly. Then press "Set", and do the same for the Low foil thickness value. If you are doing a smooth surface calibration and only use one foil, simply set the low value to zero.

Once the values are set, press OK, followed by the Back softkey. The Auto Calibration icon will now appear next to the Cal Method menu item.

Now these values are saved within the gauge, you don't have to adjust them every time you need to calibrate the Elcometer 456.

You simply select the "calibrate" menu item and follow the on screen prompts.

Along with your Elcometer 456, to undertake an Auto Calibration you will need:

- Ideally, an uncoated sample of the substrate you will be measuring on, as an uncoated sample will always result in a more accurate calibration, and should be done whenever possible. If you're calibrating on a smooth surface and do not have access to a sample, a smooth Elcometer zero plate - either ferrous or non-ferrous depending on your sample's material - can be used. If calibrating on a rough surface and don't have access to a sample, then use an uncoated sample that is representative of the substrate, and has been blasted in the same way, to a similar profile. Don't forget, if you are working on both ferrous and non-ferrous materials, then you should calibrate on samples of both.
- And the undamaged, clean calibration foils (or shims) you regularly use to calibrate. For smooth surface calibration, it's one foil that's slightly thicker than your target film thickness value. While for rough surface calibration it's two foils; one that's slightly thicker than your target film thickness, and one slightly thinner. You can stack foils to increase the thickness value if you need to. Just be sure to stack at 90 degrees so the label doesn't affect the combined foil thickness.

Please note, when using the Elcometer 456, hold gauge or probe like a pen, and place down evenly, at a 90 degree angle to the surface. When placing the probe on a calibration foil, ensure you take readings from the centre of the foil. When using an integral gauge or a probe with a wider scale range, extra care should be taken to ensure that none of the probe touches the foil label – otherwise you are measuring the thickness of the foil and the foil label!

Calibration Step 1

Put your selected high value foil or foils, flat onto the uncoated substrate (or zero plate). Then place the probe carefully onto the foil.

The Elcometer 456 asks you to take three readings, so it can average out the individual readings, which increases the accuracy of the calibration. If you get a massively different reading, this usually means the probe has been misplaced, and it's best to restart the routine – simply press the “Escape” softkey and start again.

After three readings the gauge automatically adjusts the average to the predefined high value you entered.

Calibration Step 2

The Elcometer 456 will now ask you to take three readings on the low value foil or uncoated substrate, depending on your application. Once again the Elcometer 456 takes the average reading, and adjusts it to the predefined value.

Your Elcometer 456 is now calibrated for your application.

For more information and training on the Elcometer 456 Coating Thickness Gauge, click on any of the titles on-screen.

For more information and training on the Elcometer 456 Coating Thickness Gauge, or any other Elcometer products, visit our website.