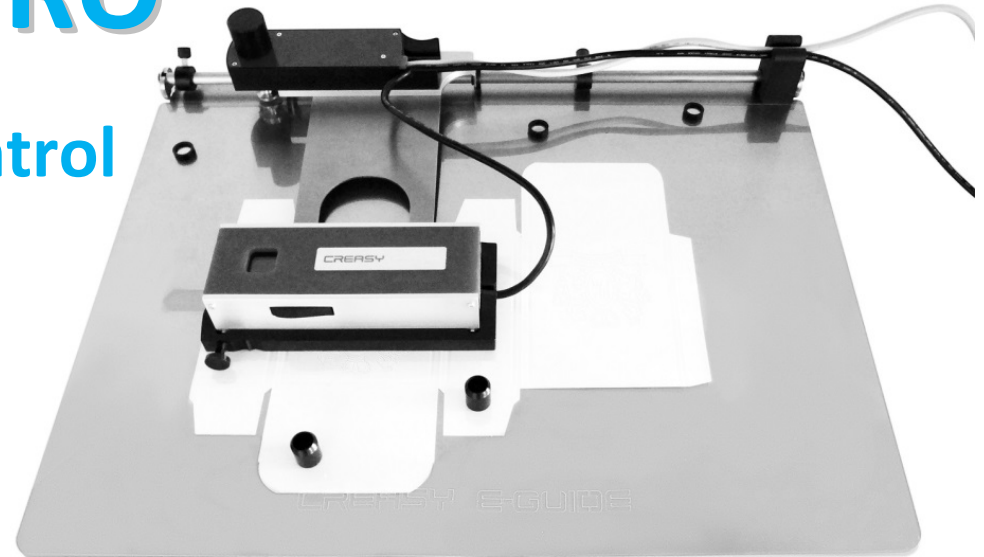




# FAG E-GUIDE-PRO

100% embossing area control

With motorized Scanner

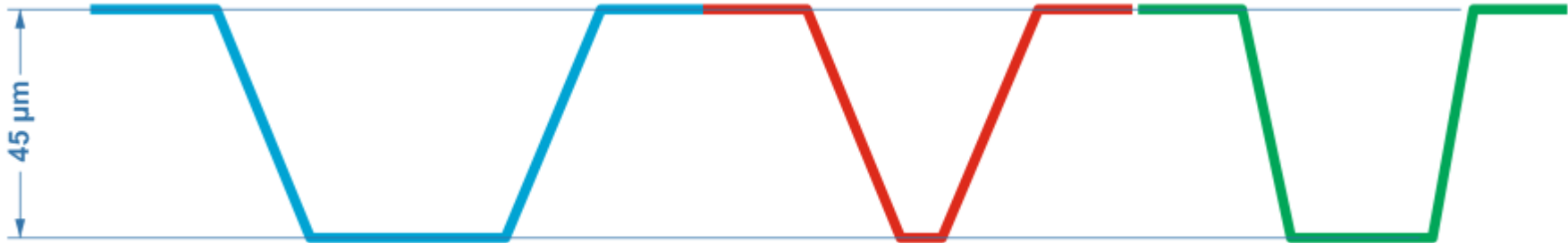


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FAG Graphic Systems  
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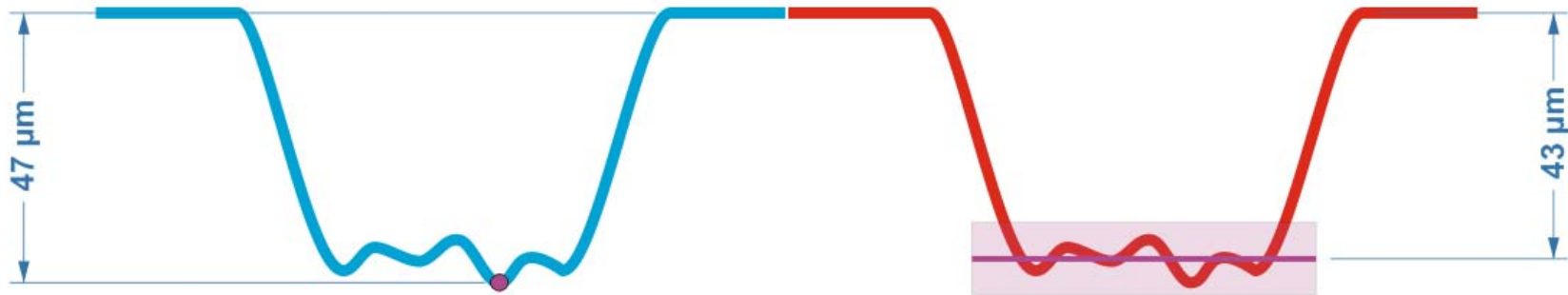
## What is the depth of embossing?



Any embossing depth measurement tool is expected to measure the **identical depth** for above three embossing samples

To measure a simple average of the entire area is not appropriate as it would deliver different depth numbers for every single sample

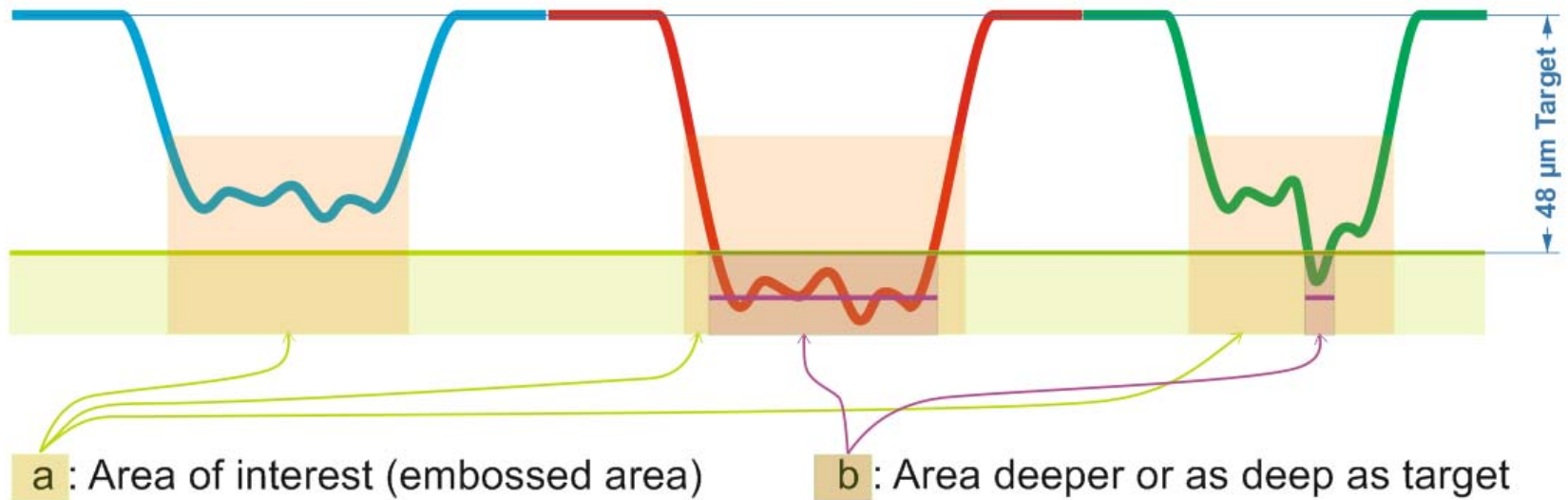
# What is the depth of embossing?



Any embossing depth measurement tool is expected to measure the **average depth** of the bottom area

To measure the deepest point delivers a random value that can not be reproduced in a manufacturing environment

# What is the depth of embossing?



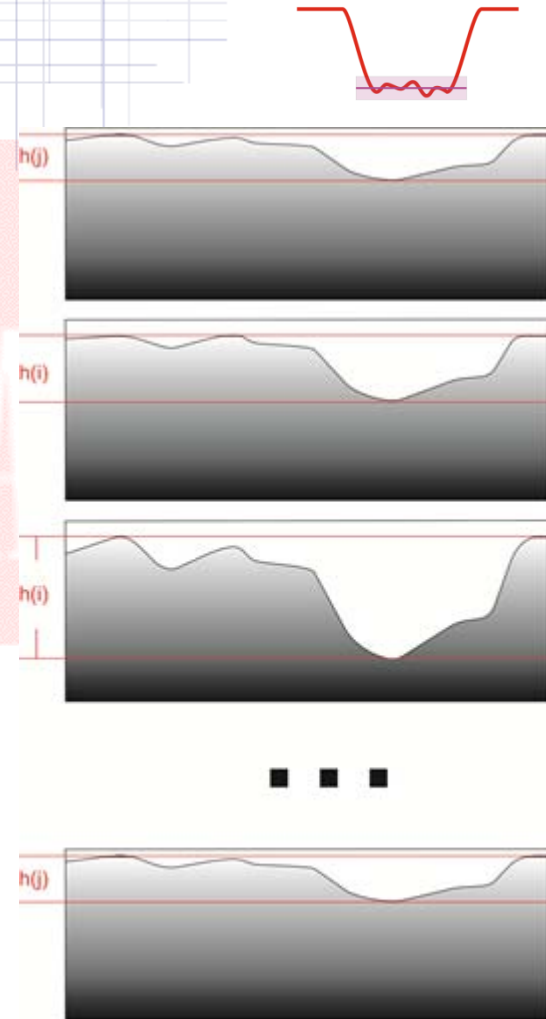
$$\text{Area deeper than Target} = 100 * (b / a) \%$$

If a target depth is defined it is of interest to know the percentage of the embossed area that is deeper or as deep as the target

# 10% Max Embossing – how is it calculated?



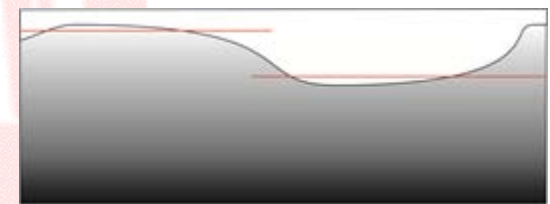
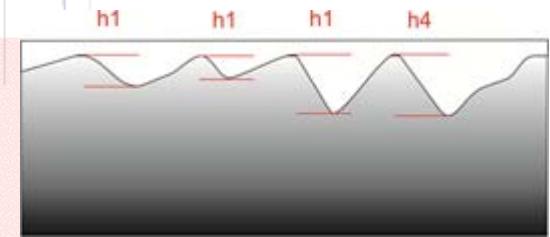
- CREASY captures up to 200 cross section images during one single scan.
- For every single cross section image the maximum difference in depth  $h(i)$  is calculated
- The average of the MAX% highest  $h(i)$  values is calculated and displayed
- The parameter MAX% can be set between 5% and 20%
- 5% will find the really deepest embossing – but small differences due to broken fibers will lead to variation in the measurement result
- 20% is very repeatable, but in case of smooth embossing edge it could show a lower value as expected



## What's the difference to simple embossing?



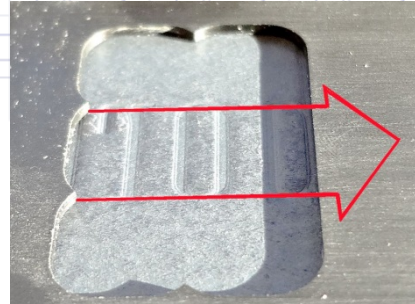
- CREASY captures one single cross section image.
- The up and down peaks are calculated using averaging the smooth flat areas on top and bottom.
- The height differences between an up peak and the left and right down peak are calculated
- The maximum height difference is displayed.
- Applying this function several times by slightly moving the device over the embossing, the maximum will become stable.



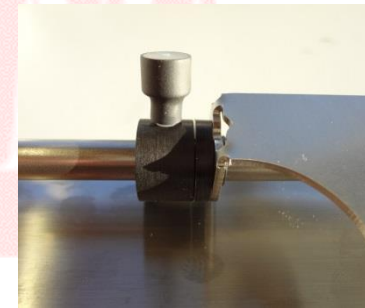
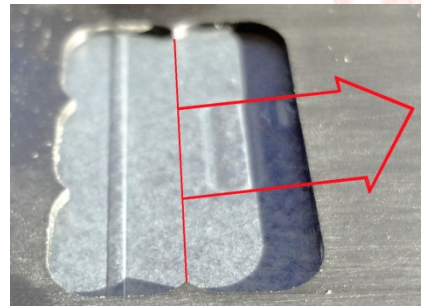
*Because this calculation is not based on a full scan it does depend on the operator to obtain repeatable measurement results. It is not as precise as measurements using EGUIDE!*

# Setup the E-Guide for a box blank in 3 Steps

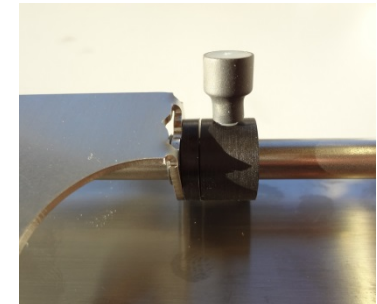
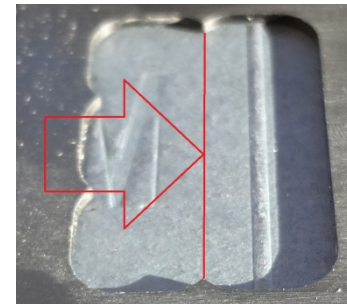
- Center the embossing of the box blank



- Define the starting point of the embossing



- Define the end point of the embossing
- Define the scanning distance in case of EGUIDE-PRO

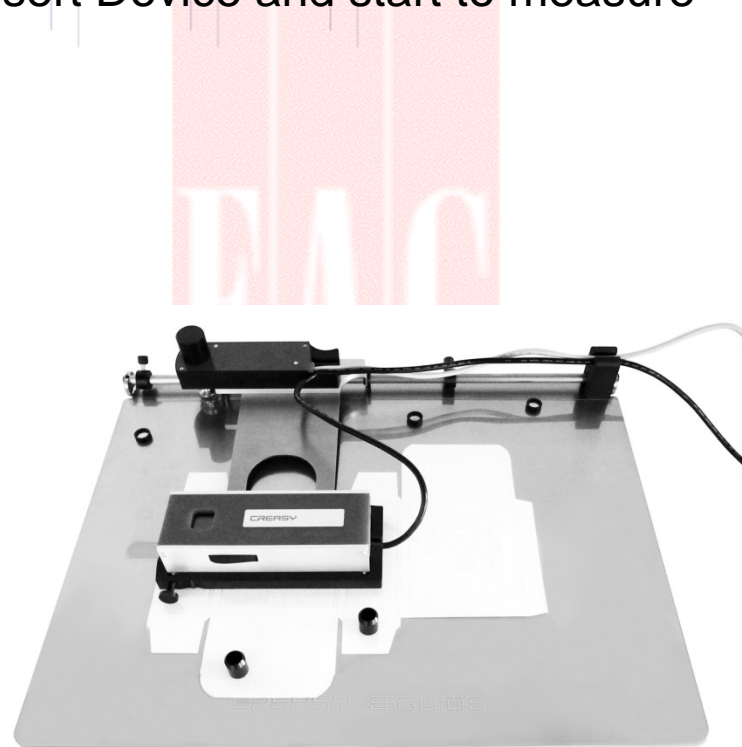
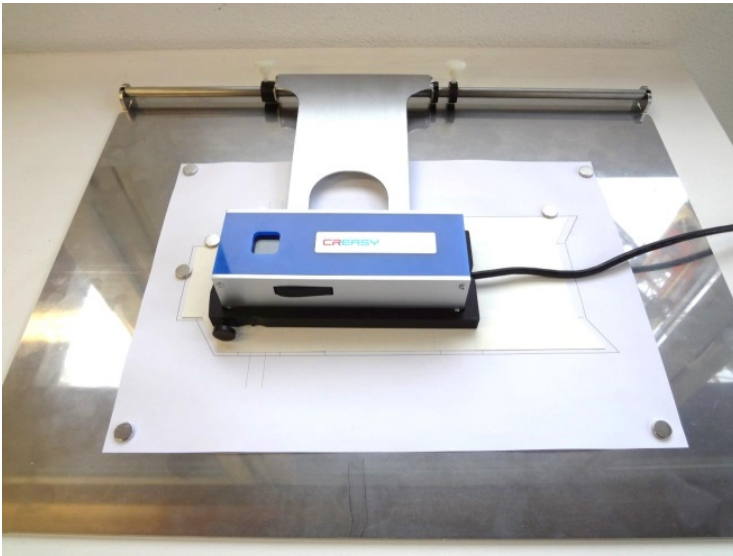


Scanning distance  mm

# Setup the E-Guide for a box blank in 3 Steps



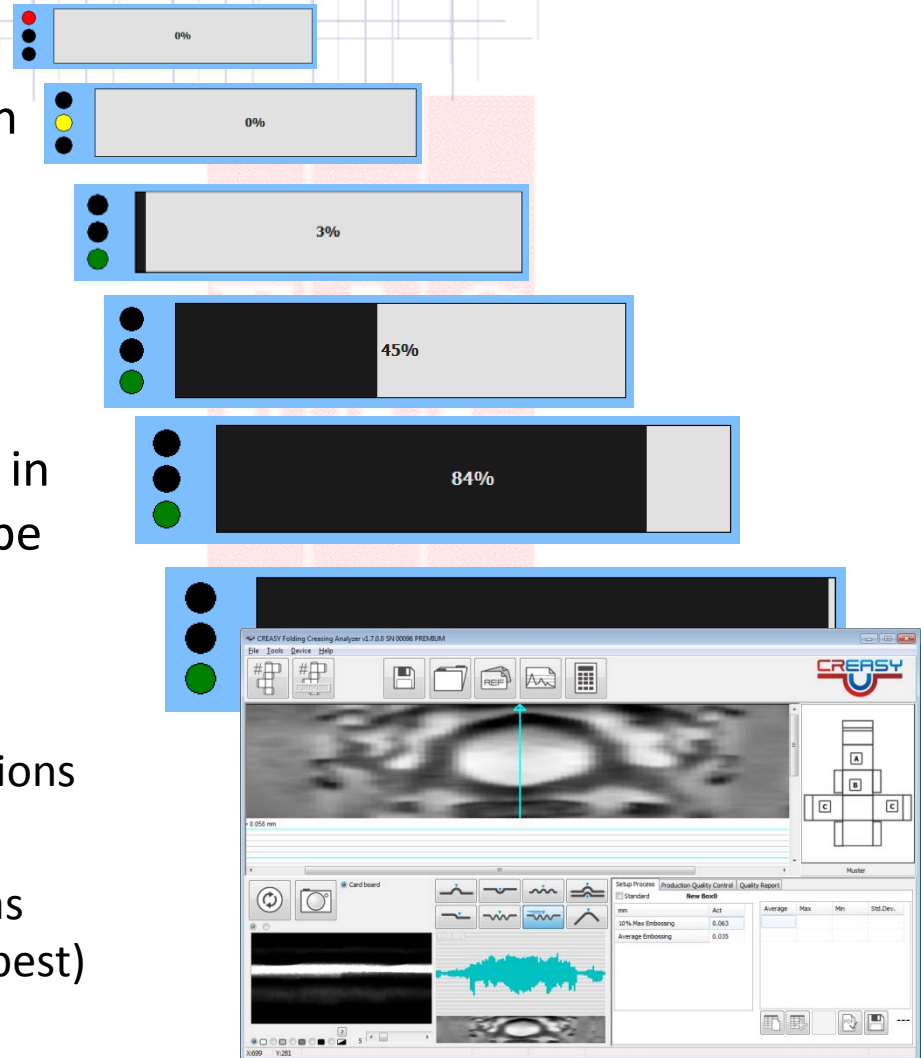
Fix alignments with magnets, insert Device and start to measure





## Measure Embossing using E-GUIDE

- Position the box blank
- Move the device to the start position
- Press the measurement button
- Wait until the traffic light gets green
- Move the device over the box blank according to the bar on the screen – in case of EGUIDE-PRO the device will be moved automatically
- The software automatically creates
  - a 3D image based on 200 cross sections with 1280 measurements each
  - and calculates the Embossing value as the average of the 10% highest (deepest) areas



# Embossing measured with E-GUIDE

CREASY Folding Creasing Analyzer v1.7.0.0 SN 00096 PREMIUM

File Tools Device Help

CREASY

0.058 mm

Muster

Card board

Setup Process Production Quality Control Quality Report

Standard **New Box0**

mm	Act	Average	Max	Min	Std.Dev.
10% Max Embossing	0.063				
Average Embossing	0.035				

X:699 Y:281



**Thank you...**

**See what happens**

**Understand why it happens**

**Take corrective actions**

