PACE TECHNOLOGIES

MATERIALS PLUS
Decarburization

Example: Decarburization

This module measures the depth or width of decarburization (for example when carbon is burnt from the surface of a steel during heat treating). As the decarburized surface layer can influence the properties of the finished product, it is important to be able to analyze it.

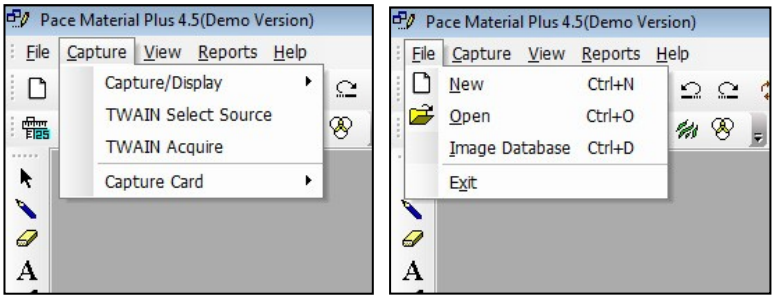
Compared with traditional manual techniques, this method can provide a significant improvement in laboratory productivity. The method is based on ASTM E-1077.

PROCEDURE:

1. Load the image for the decarburization measurement.
2. Select the appropriate saved calibration scales from the drop down list at the bottom of the Window
3. Click on the Decarb icon  either from the Toolbar or from the Menu-bar
4. Choose the radio tab for
   -Complete Decarb
   -Partial Decarb
   -Total Decarb
5. Activate PARTIAL DECARB. Draw a line from the starting point to the end point of the partial decarb zone on the captured image.
6. Activate COMPLETE DECARB. Draw a line from the starting point to the end point of the compete decarb zone on the captured image. A blue line displays the width of the partial decarb and the red line represents the complete decarb width.
7. Click on TOTAL DECARB. The total of both the partial and complete decarb is displayed in the results window for field 1.
8. Repeat steps 5-7 to add more fields.
9. If you only require the complete decarb measurement, activate COMPLETE DECARB.
10. Draw one or more lines on the compete decarb layer.
11. To save the report, click on REPORT.
12. A sample information window will appear. Fill the required information. Click on “Save Data For Report Tool”
13. 13. Click on “TO EXCEL” to see the result in Excel.

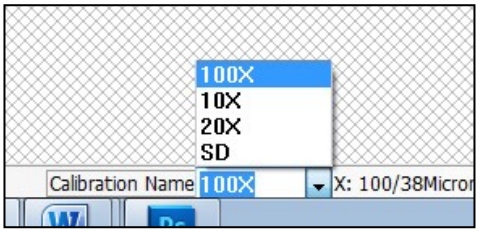
EXAMPLE of Grain Size – DECARBURIZATION

File > Open (select image) or Capture > TWAIN Acquire (for live image)

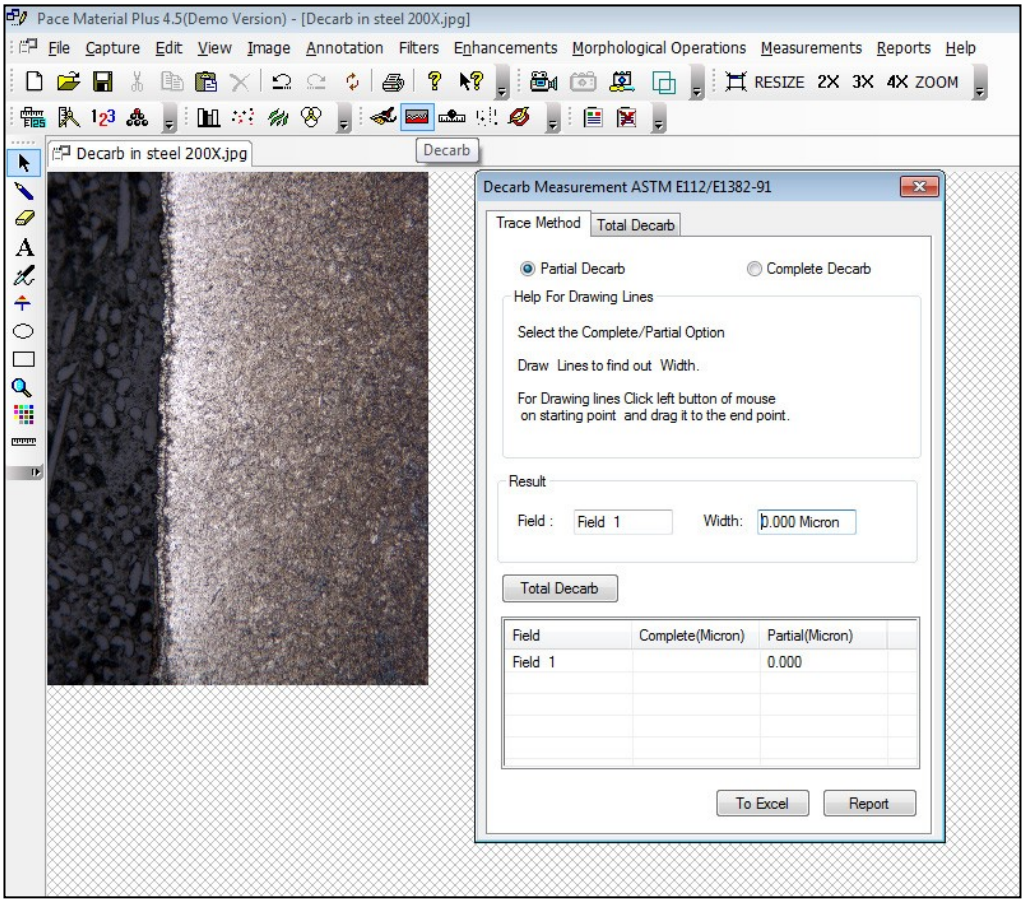


PACE Technologies - 3601 E. 34th St. - Tucson, AZ 85713 - USA
+1 (520) 882-6598 - FAX +1 (520) 882-6599 - email: pace@metallographic.com
www.metallographic.com

2. Select Calibration scale at bottom of the Window

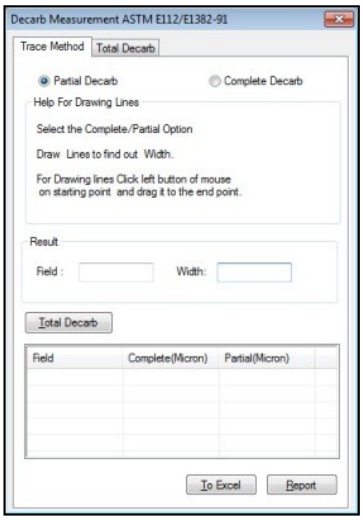


3. Click on the Decarb icon  either from the Toolbar or from the Menu-bar

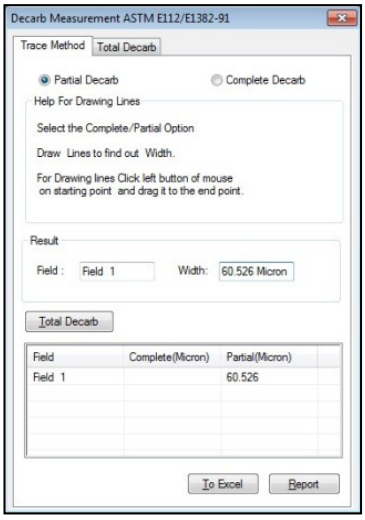


4. Choose the radio tab for

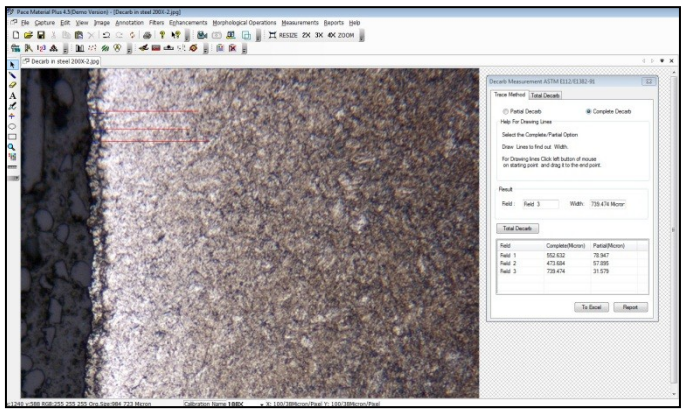
-Complete Decarb
-Partial Decarb
-Total Decarb



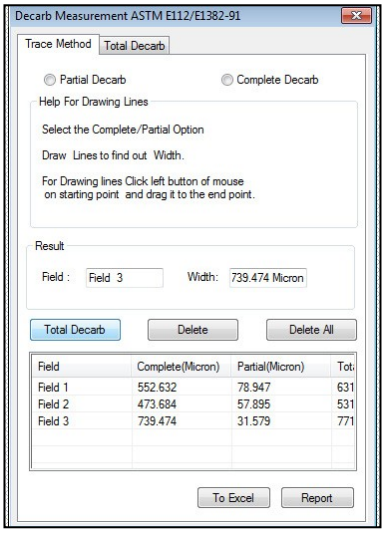
5. Activate PARTIAL DECARB. Draw a line from the starting point to the end point of the partial decarb zone on the captured image.



6. Activate COMPLETE DECARB. Draw a line from the starting point to the end point of the compete decarb zone on the captured image. A blue line displays the width of the partial decarb and the red line represents the complete decarb width.



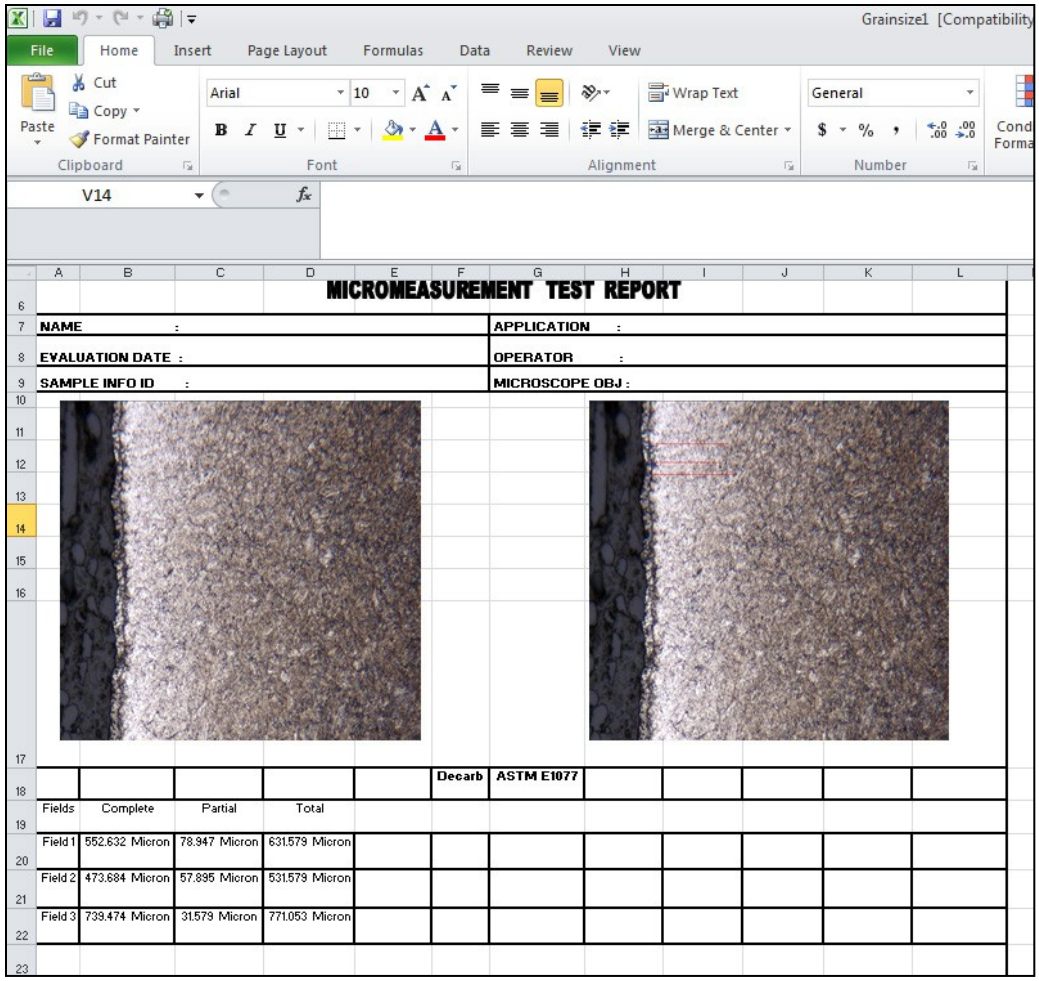
7.Click on TOTAL DECARB. The total of both the partial and complete decarb is displayed in the results window for Field 1.



8. Repeat steps 5-7 to add more fields.
9. If you only require the complete decarb measurement, activate COMPLETE DECARB.
10. Draw one or more lines on the complete decarb layer.
11. To save the report, click on REPORT.
12. A sample information window will appear. Fill the required information. Click on "Save Data For Report Tool"
13. Click on "TO EXCEL" to see the result in Excel.

PACE TECHNOLOGIES

MATERIALS PLUS
Decarburization



MICROMEASUREMENT TEST REPORT

NAME :	APPLICATION :
EVALUATION DATE :	OPERATOR :
SAMPLE INFO ID :	MICROSCOPE OBJ :

					Decarb	ASTM E1077					
Fields	Complete	Partial	Total								
Field 1	552.632 Micron	78.947 Micron	631.579 Micron								
Field 2	473.684 Micron	57.895 Micron	531.579 Micron								
Field 3	739.474 Micron	31.579 Micron	771.053 Micron								

PACE Technologies - 3601 E. 34th St. - Tucson, AZ 85713 - USA
+1 (520) 882-6598 - FAX +1 (520) 882-6599 - email: pace@metallographic.com
www.metallographic.com