



# User Manual

PCE-CRC 10 Material Tester



User manuals in various languages (Deutsch, français, italiano, español, português, nederlands, türk, polski, русский , 中文) can be downloaded here:

[www.pce-instruments.com](http://www.pce-instruments.com)

Last change: 20 December 2016  
v1.0



## Contents

1	Safety notes .....	1
2	Test procedure .....	2
3	Analysis .....	3
4	Contact.....	4
5	Disposal .....	4

## 1 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The device must only be used with accessories from PCE Instruments or equivalent. Otherwise, PCE Instruments does not grant any warranty or assume any liability for defects or damage.
- Do not make any technical changes to the device.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments. The contact details can be found at the end of this manual.

## 2 Test procedure

1. Place the cross-cut tester on the test object, apply soft pressure and pull the device towards yourself in even movements in order to make parallel cuts with a length of approx. 20 mm. Apply enough pressure to make sure that you reach the next layer or carrier material.
2. Place the cutting tool on the sample at 90° to the first cut and repeat step 1 to create a lattice pattern on the coating (Figure 1).
3. Use a brush to remove dirt from the lattice and inspect to ensure the cuts have penetrated all the way through the coating (Figure 2).
4. Remove and discard two complete turns of adhesive tape. Remove an additional length of tape at a steady rate and cut a piece approximately 75 mm from this length.
5. Place the turns in the middle of the lattice and use a pencil eraser to straighten the adhesive tape. (Image 3)
6. Remove the adhesive tape carefully in a 180° angle. (Image 4)
7. Analysieren the result.
8. Repeat the test in two more positions.

**Note:** If you would like more information on this test method, please have a look at the relevant standard (ISO/ASTM).

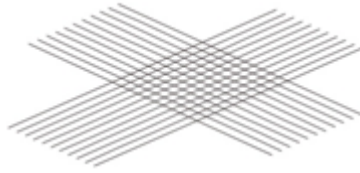


Figure 1



Figure 2



Figure 3

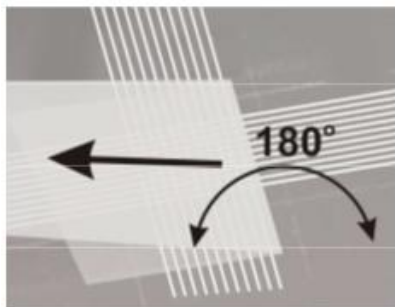
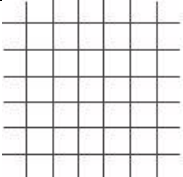
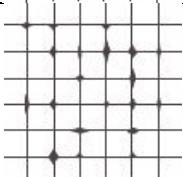
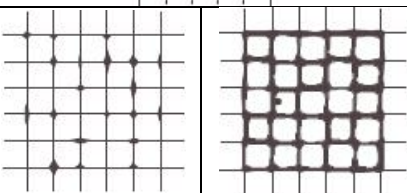
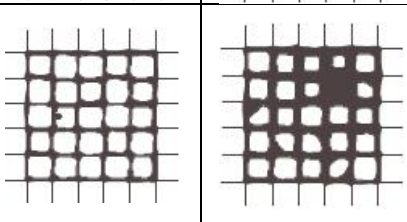
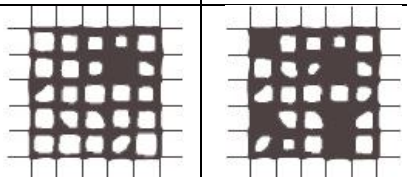
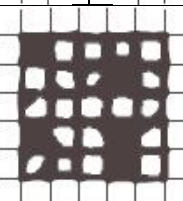


Figure 4

### 3 Analysis

Coating adhesion can be assessed by comparing the lattice of cuts with ASTM or Corporate Standards. The ASTM standards are reproduced in the following table.

	<p>The edges of the cuts are completely smooth; none of the squares of the lattice is detached.</p>	0	5B
	<p>Detachment of flakes of the coating at the intersections of the cuts. A cross cut area not significantly greater than 5% is affected.</p>	1	4B
	<p>The coating has flaked along the edges and/or at the intersections of the cuts. A cross cut area significantly greater than 5%, but not significantly greater than 15% is affected.</p>	2	3B
	<p>The coating has flaked along the edges of the cuts partly or wholly in large ribbons, and/or it has flaked partly or wholly on different parts of the squares. A cross cut area significantly greater than 15%, but not significantly greater than 35%, is affected.</p>	3	2B
	<p>The coating has flaked along the edges of the cuts in large ribbons and/or some squares have detached partly or wholly. A cross cut area significantly greater than 35%, but not significantly greater than 65%, is affected.</p>	4	1B
	<p>Any degree of flaking that cannot be classified even by classification 4 (1B).</p>	5	0B



## 4 Contact

If you have any questions, suggestions or technical problems, please do not hesitate to contact us. You will find the relevant contact information at the end of this user manual.

## 5 Disposal

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.



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