

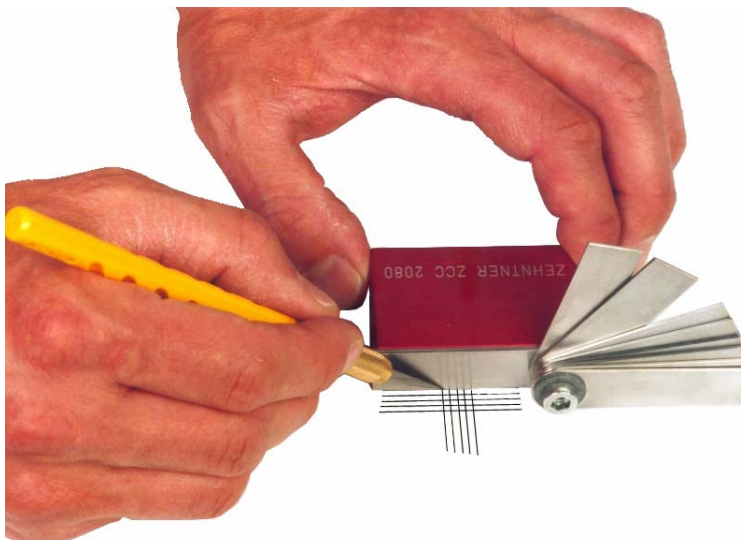
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Instruction manual

version 1.5 from 12.01.2006

ZCC 2080 Cross-Cut tester



Index

Index	2
Exclusion of liability	2
1. Safety precautions and warnings	3
2. Standard extent of delivery	3
2.1 Damages during carriage	3
2.2 Extent of delivery	3
2.3 Optional accessories	3
3. Handling.....	4
4. Overview - Cross-cut classification.....	5
5. Technical specification.....	6

Annexe:

- Certificate of manufacturer

Exclusion of liability

Illustrations, descriptions as well as the technical specifications accord with the instruction manual in hand for the time of printing. Subject to change resulting from technical improvement, modified construction or similar changes.

This instruction manual has been written with the utmost care. Nevertheless, errors can not entirely be eliminated. The manufacturer shall not be liable for errors contained herein or for incidental or consequential damages resulting from possible errors.

We would therefore welcome any suggestions and references to errors.

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1. Safety precautions and warnings

- The ZCC 2080 is exclusively designed for easy evaluation of adhesion of single- or multi-coat systems. Any other application is not in accordance with the regulations. The manufacturer is not liable for damage resulting from inappropriate application. The user bears the full responsibility.
- Only spare parts and optional components provided by the manufacturer may be used in combination with the ZCC 2080. If components other than provided by ZEHNTNER are used with the ZCC 2080, there is no guarantee by ZEHNTNER for resulting damages, defects or malfunctions.
- Unauthorised modifications and changes of the ZCC 2080 are not allowed. These will invalidate the guarantee. The manufacturer is not liable for damages resulting from unauthorised modifications; the user bears the full responsibility.

2. Standard extent of delivery

2.1 Damages during carriage

After unpacking the instrument, please look for any transport damage in case of which we kindly ask you to inform the insurance company and **ZEHNTNER GmbH TESTING INSTRUMENTS** respectively.

2.2 Extent of delivery

The following parts are included in the delivery:

- 1 cross-cut tester with folding ruler
- 1 NT-cutter
- spare blades
- 1 roll adhesive tape (length: 22 m, width: 25 mm)
- certificate of manufacturer
- 1 carrying case

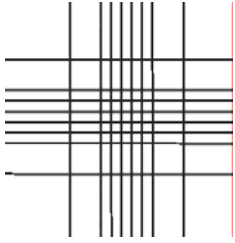
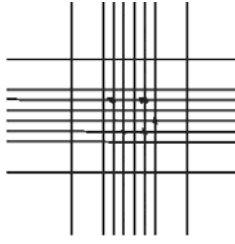
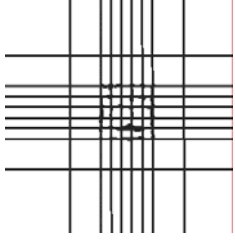
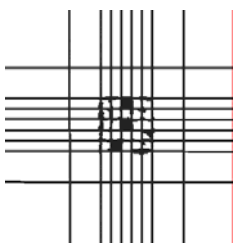
2.3 Optional accessories

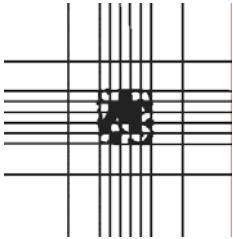
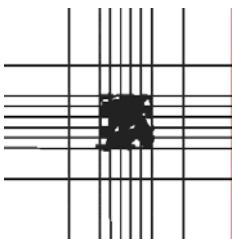
- ACC 041 magnifier
- ACC 042 brush
- ACC 162 roll adhesive tape (length: 22 m, width: 50 mm)

3. Handling

- Place the folding ruler on the plain surface to be tested, and hold the folding ruler in such way that the cuts always are executed away from the body and from the hand holding the templet! Never hold the folding ruler at the shims!
- Make six parallel cuts in the requested spacing (ASTM 1mm: 11 cuts), cutting the coating to the substrate.
- Turn the folding ruler 90° and make another six cuts crosswise with the same spacing (ASTM 1mm: 11 cuts).
- Brush the film lightly with a soft brush (ASTM: or tissue) along the diagonals to the grid.
- Additional adhesive tape test (not for soft substrates acc. to DIN EN ISO):
 - Remove two complete laps of tape and discard.
 - Remove an additional length at a steady rate and cut a piece about 75 mm long. Stick the piece adhesive tape on the cut area. Rub the tape firmly by finger (DIN EN ISO) or with the eraser on the end of a pencil (ASTM).
 - Within 5 minutes (DIN EN ISO) or within $90 \text{ s} \pm 30 \text{ s}$ (ASTM) remove carefully and steady within approx. 0,5 s to 1 s in an angle of 60° in the pulling direction (ASTM: back upon itself at as close to an angle of 180° as possible).
 - (DIN EN ISO: Keep the tape for comparisons, eg. by sticking it on a transparent film)
 - Compare the cross-cut with the table on the backside.
 - Issue a test report
 - The test report shall contain the used adhesive tape as well as any changes in the test procedure of the used standard.

4. Overview - Cross-cut classification

cross-cut	according to EN ISO 2409	according to ASTM D 3359
	<p>0: the edges of the cuts are completely smooth; none of the squares of the lattice is detached.</p>	<p>5B area affected 0%</p>
	<p>1: Detachment of small flakes of the coating at the intersections of the cuts. A cross cut area not significantly greater than 5% is affected.</p>	<p>4B less than 5%</p>
	<p>2: 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>	<p>3B area affected 5 - 15 %</p>
	<p>3: 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% is affected.</p>	<p>2B area affected 15 - 35 %</p>

cross-cut	according to EN ISO 2409	according to ASTM D 3359
	<p>4: 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>	<p>1 B area affected 35 - 65 %</p>
	<p>5: Any degree of flaking than cannot even be classified by classification 4.</p>	<p>0 B area affected above 65 %</p>

5. Technical specification

Version:	ZCC 2080.1	ZCC 2080.3
Shims:	1 mm made of high-grade stainless steel	3 mm made of brass, special for road markings
Material:	Anodized aluminium, red	

Standards: DIN EN ISO 2409, ASTM D 3359

Warranty: 2 years