

ADHESION

CROSS-CUT TESTER CC2000



Cross-Cut
Adhesion Test



STANDARDS

ISO 2409 · ASTM D3359 · DIN 53151

The NK Cross-Cut Tester is designed to assess the adhesion of paint films and coatings on various substrates using the standardised cross-cut test method.

This procedure determines the coating's adhesion, resistance to peeling or delamination when a controlled incision is made that reaches the substrate.

The system has been designed and manufactured by NK, ensuring reliability, repeatability and compliance with the main international standards.

APPLICATION

The method involves making a series of parallel and perpendicular cuts on the coated surface, forming a grid of uniform dimensions that reaches the substrate.

Once the cuts have been made:

1. The area is cleaned using a soft brush.
2. Standard adhesive tape is applied over the grid.
3. The tape is removed in a smooth, even motion.
4. The test area is examined using a magnifying glass to assess the degree of delamination or lifting of the coating.

The result is classified according to the scales defined in the reference standards (UNE EN ISO 2409, ASTM D3359 or DIN 53151), providing an objective assessment of the coating system's adhesion.

The ergonomic 3D handle is made from high-strength materials to ensure stability and precision during the test. It features a pivoting head, which allows the head to move freely to compensate for the natural movement of the hand, thus making it easier to perform all cuts in a single pass.

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The cross-cut instruments for paint adhesion testing come with a selection of cutting blades to comply with coating adhesion test methods in accordance with ASTM and ISO. The blades have different spacing between cuts, adapted to different coating thickness ranges as specified by ISO 2409:

- 1 mm pitch with 6 cuts for coatings from 0 to 60 µm
- 2 mm pitch with 6 cuts for coatings from 61 to 120 µm
- 3 mm pitch with 6 cuts for coatings from 121 to 250 µm
- 4 mm pitch with 6 cuts for coatings ≥ 250 µm, non-standard.
- 1 mm pitch with 11 cuts for special applications.



Classification of results in accordance with ISO 2409:

Table 1 – Classification of test results

Category	Description	Appearance of the surface in the grid area with flaking* (example for six parallel incisions)
0	The edges of the incisions are perfectly smooth; no squares in the grid have come away.	
1	Slight flaking of the coating is observed at the intersections of the incisions. The affected area of the grid is less than 5 per cent.	
2	Peeling of the coating is observed at the edges and/or at the intersections of the incisions. The affected grid area is more than 5 per cent, but less than 15 per cent.	
3	The coating has flaked off partially or completely in large strips along the edges of the incisions and/or has flaked off partially or completely in various parts of the squares. The affected area of the grid is more than 15 per cent but less than 35 per cent.	
4	The coating has flaked off in large strips along the edges of the incisions and/or some squares have become partially or completely detached. The affected area of the latticework is more than 35 per cent but less than 65 per cent.	
5	A higher degree of flaking is observed than in category 4.	-

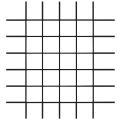
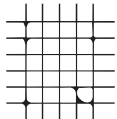
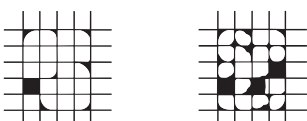
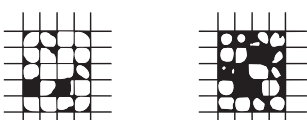
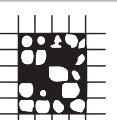
* The figures are examples of a grid within each category. The percentages shown are based on the visual impression conveyed by the images, and these same percentages will not necessarily be reproducible using digital images.

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Classification of results according to ASTM D3359:

Table 1 – Classification of test results

Classification	Percentage of detached area	Appearance of the grid-patterned cut area with delamination for six parallel cuts and adhesion range by percentage
5B	0% (None)	
4B	Less than 5%	
3B	5–15 %	
2B	15–35 %	
1B	35–65 %	
0B	Más del 65 %	

INSTRUCTIONS FOR USE

- Before each test, check the condition of the blade and ensure the substrate is clean.
- Replace the blades when they show visible wear or have lost their edge.
- Keep the handle and accessories clean and free from paint residue.
- Store the equipment in its case to prevent damage from impact or contamination.
- Use only standardised adhesive tapes that are within their shelf life.

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MODELS

Cross cut tester UNE ISO

ISO 2409 · ASTM D3359 · DIN 53151

Code	Description
NK-CC2000	CC2000 Cross cut adhesion tester

The supply includes: case, magnifying glass, handle, brush and ISO 2409 standard tape; blades not included



Handles

Code	Description
NK-CC2000-H	Mango 3D para ensayo de adherencia por corte enrejado

The supply includes: handle, allen key, container.



ACCESSORIES

Blades

The blades are circular and feature 8 cutting zones, making them very durable. When one zone wears out, the wheel is rotated to the next zone.

Code	Description
NK-CC2000-1	1 mm pitch, 6 cuts (0–60 µm).
NK-CC2000-2	2 mm increments, 6 sections (61–120 µm).
NK-CC2000-3	3 mm pitch, 6 sections (121–250 µm).
NK-CC2000-4	4 mm pitch, 5 sections (≥250 µm).
NK-CC2000-5	1 mm pitch, 11 sections (special applications).



Adhesive Tapes

Code	Description
NK-CC2409	ISO 2409:2020 tape 6.25 N / 25 mm, 50 mm wide
NK-CC2410	FORD standard tape 77 N / 100 mm, 25 mm wide
NK-CC2411	Renault 2525 standard tape 75 N / 100 mm, 24 mm wide
NK-CC2412	Opel standard belt 4651 3.5 N / 10 mm, 25 mm wide
NK-CC2413	Standard Volkswagen 4657 belt 4.6 N / 10 mm, 30 mm wide



Optional calibration	Code	Description
✓	CAL020	ENAC Calibration Certificate for Blade