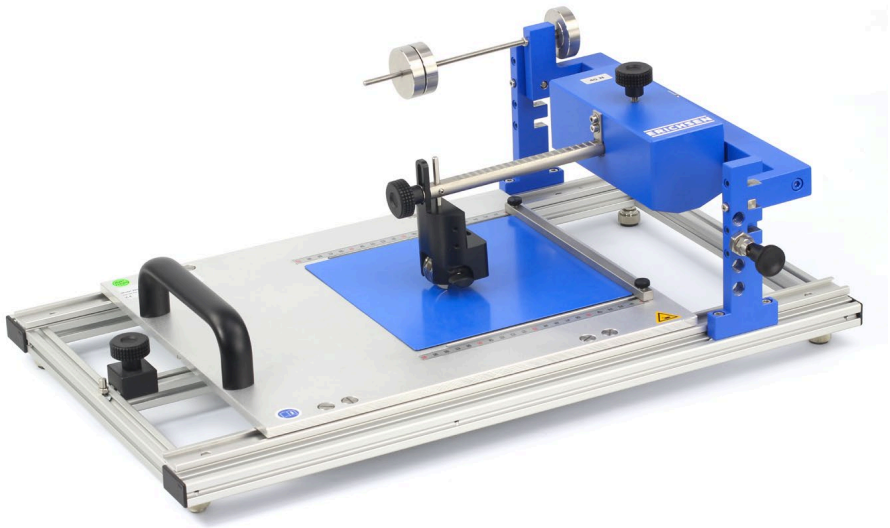


SledCutter
295 XVII



testing equipment for quality management

ERICHSEN
since 1910

Technical Description

High Economic Efficiency
Caused by four independent
Cutting Edges

Standardized
Cross Cutting Tests
on different Coating
Materials

Principle of Testing

The adhesion of a coating on a base material is not only a mechanical property defining the bond between coating and substrate, but it is also of particular importance with regard to the corrosion protection, since areas of poor adhesion can easily be affected by corrosion.
For many years already the cross cutting is the best known and the most frequently used adhesion test method for different coating materials on various substrates!

The standardised cross-cut test provides a very straight forward method of establishing the adhesion quality.

Purpose and Application

The **SledCutter 295 XVII** is used for the manually driven application of defined cross-cut grids onto coated test panels, but without the well known limitations of purely manual guidance, which are associated with free-handles/operated hand tools (handles with multi-blade cutters), such as often strong deviation within the applied cutting force and possibly quite too inaccurate angles in the cutting grid.
The adjustable cutting force allows comparable testing of even large series, without tiring the user, or risking injuries. The linearly guided cutting movement, the adjustable stop ledge bar and the fixable path limit enable very precise cross-cut patterns with an accurate 90° angle.

The **SledCutter 295 XVII** is a tabletop device. The carriage is equipped with a linear guide (slide bearing) and is moved by hand. The testing device has a height-adjustable load arm equipped with a swing bearing.
With the included multi-cut adapter and multi-blade cutter with 6 cutting edges of your choice, defined cross-cutting grids can be easily applied.

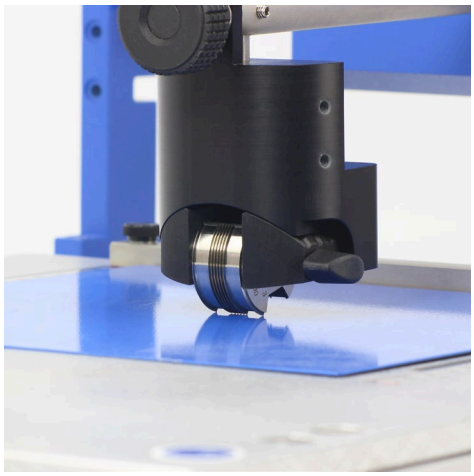


There is a choice of three multi-blade cutters with different cutting distances (6x1 mm, 6x2 mm or 6x3 mm), whereby each cutting body is equipped with **four** cutting edges, which allows a total of three changes to the next sharp cutting edge after wear.

The desired scratching force is set by moving and fixing the rider weight sliding on the load arm, whereby the possible setting range is 2 - 40 N (60 N with additional load weight).

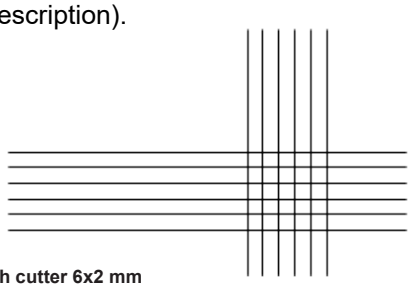
Test Principle

After setting the desired scratching force, the Multi-Cut adapter with multi-blade cutter is placed on the test panel to be scratched in a controlled manner.



The scratching process is carried out by pulling the carriage evenly towards the handle. A moderate speed that is not too fast has proven to be effective for this, which experience has shown can be transferred in a very controlled manner with outstretched arms, whereas the upright stable standing user moves back just by balancing on his legs, which are front and rear spreat.
After the first cut, the test panel is rotated by 180°. The second cut is then made with the same force. The coating is crossed with defined, right-angled and intersecting cuts until the substrate is recognisable throughout, for which it may be useful to adjust the cutting force on the load arm as required.

The square pattern that is obtained can be evaluated visually by examining the way in which the coating has broken away from the base material (along the cutting edges and/or complete squares),and this can be compared with schematic representations in the standard.
The result will be furnished with a judgement scale's code (e.g. with the aid of the evaluation table in accordance with EN ISO 2409 on the last page of this technical description).

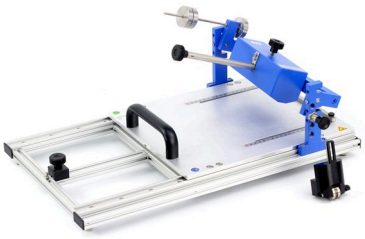


For example with cutter 6x2 mm

Technical Data

Dimensions (LxWxH)	approx. 600 x 400 x 240 mm
Weight	approx. 18 kg
Scratching force	approx. 2 - 40 N (with additional weight approx. 60 N)
Max. scratch length	approx. 220 mm
Max. dimensions of the test panels:	
Length x Width x Thickness	300 x 200 x 20 mm

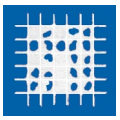
Order Information

Figure	Ord.-No.	Product Description
	33060131	**SledCutter 295 XVII** for manual application of defined cross-cut grids to coated test panels; with height-adjustable load arm and load arm swing; including multi-cut adapter and one cutter with 6 cutting edges of your choice (6x1 mm, 6x2 mm or 6x3 mm cutting distance, without Manufacturer's Test Certificate), adjustable support weight (40 N), 2 tare weights, circular spirit level and Allen key SW2, operating instructions.
		Zubehör
	04330132	Cutter (6 x 1 mm cutting distance)
	04330232	Cutter (6 x 2 mm cutting distance)
	04330732	Cutter (6 x 3 mm cutting distance)
	23470232	Backpack Weight Block (20 N)
	16292432	Manufacturer's Test Certificate M acc. to DIN 55 350, Part 18, incl. cost for examination and calibration/re-calibration, for cutter (Model 295)

Standard	Layer Thickness	Number of cuts x distance (mm)
ISO 2409	up to 60 µm	6 x 1 [2] 6 x 2 [3]
EN ISO 2409[1] JIS K 5600-5-6	60 µm up to 120 µm 120 µm up to 250 µm	6 x 2 6 x 3
EN 13523-6[4] (formerly ECCA T6)	up to 60 µm above 60 µm	6 x 1
ASTM D 3359	up to 50 µm 50 µm up to 125 µm	6 x 2
VDA 621-411	up to 60 µm 60 µm up to 120 µm above 120 µm	6 x 1 6 x 2 6 x 3

[1] Since 1994, the European standard EN ISO 2409 replaces the national standards DIN 53151, BS 3900:E6, NF T 30-38, NEN 5337 and SIS 184172.
[2] for hard substrates
[3] for soft substrates
[4] The cross hatch test is intensified by a subsequent deep drawing test acc. to EN ISO 1520, which can be performed using the ERICHSEN Cupping Test Machines, Models 200 and 202 EM

Determination of Cross Hatch Cut Classifications

Cuts' appearance	Description	Classification
	Completely smooth blades of the cuts, without any loss of coating material.	0
	Loss of small coating material's particles, detached from the cuts' intersections; chipped surface not more than 5 % of the cross hatch cut's area.	1
	Loss of small coating material's flakes along the cuts' blades and/or at their intersections; chipped surface more than 5 % but not more than 15 % of the cross hatch cut's area.	2
	Loss of coating material's flakes along the cuts' blades and/or of squares (partly or wholly); chipped surface more than 15 % but not more than 35 % of the cross hatch cut's area.	3
	Loss of coating material's flakes along the cuts' blades and/or of squares (partly or wholly). chipped surface more than 35 % but not more than 65 % of the cross hatch cut's area.	4
	Coating material's loss of distinctly more than 65%, which cannot even be classified by classification "4".	5

Please also request our literature for the **CrossScan 295 XVI**.
The Automatic Cross Hatch Cut Rating System with evaluation software determines the percentage (coating) material loss in the defined area of the cross hatch pattern and automatically assigns the corresponding cross hatch characteristic according to the standard



Subject to technical modifications.
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ERICHSEN GmbH & Co. KG
Postfach 1264 | 58652 Hemer | Germany | Tel. +49(0)2372-9683-0 | Fax +49(0)2372-6430 | www.erichsen.de | info@erichsen.de

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