

# ABREX®

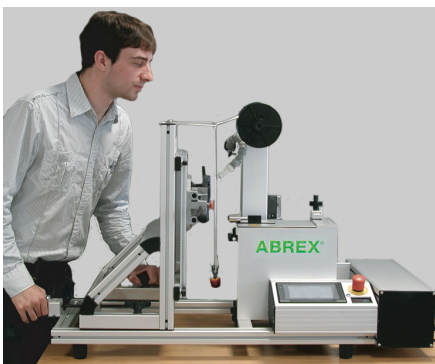
Fingertip & Hand Abrasion  
Soft Chemo Mechanical Abrasion  
Delamination  
Scratch Resistance  
Nailscratch  
Fingerprint Cleanability  
Shoe Sole Abrasion

## Standard List

**ABREX®** is by far the only testing machine which can simulate the **ABREX® -abrasion** and durability tests with different standard textiles under different chemical environments. All tests can be applied either on a lab sample or on a finished product. It complies with over 50 international standards (IEC/ DIN/EN) for the following applications:

## Highlights

- Reproducible results due to standardized test standards
- Real application simulation of chemo-mechanical abrasion
- Universal functionalities due to modular design
- Calibratable testing machine to secure reproducibility



STANDARD NUMBER	DESCRIPTION
prEN 4860	Aerospace series — Environmental testing — Test Xb: Abrasion of markings, letterings, surfaces and materials caused by rubbing of fingertips and hands
prEN 4876	Aerospace series — Environmental testing — Durability of the displays by general usage
IEC 68-2-70 DIN EN 60068-2-70	Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands-Abrex
BMW GS97034-1	Surface test of motor vehicle interior materials - Manual abrasion test
BMW GS97034-2	Surface test of motor vehicle interior materials, Finger nail test
BMW GS97034-3	Surface test of motor vehicle interior materials - Shoe sole test
BMW GS97034-4	Surface test of motor vehicle interior materials - Color abrasion behaviour (Test procedure A: Abrex method)
BMW GS97034-5	Surface test of motor vehicle interior materials - Resistance to cleaning agents (Test procedure A: - Abrex method)
BMW GS97034-6	Surface test of motor vehicle interior materials, soiling behavior and cleaning ability (Test procedure A: Abrex method)

## Standard List

STANDARD NUMBER	DESCRIPTION
BMW PA-P 315	Abrasion Resistance (dry + test media according to BMW AA-P 077)
BMW AA-0471	Abrasion Resistance
BMW AA-P 296	Abrasion resistance (dry + test media acc. to GS 97045)
PSA D24 5020	Coatings for decorative interior plastic components - Abrasion resistance - Abrex Test Method
Daimler DBL 7384	For coated plastic parts used in the interior of vehicles.
Daimler DBL 9202	For decorative parts used in the interior of passenger car compartment
Ford WSS-M2P188-A1/FLTM BN155-01/	Surface test of motor vehicle interior materials - Shoe sole test
GB-T 2423.53	Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
JIS C 60068-2-70	Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
Renault	Abrasion Resistance using the ABREX Test Equipment
EWIMA	Abrasion Resistance using the ABREX Test Equipment
GSO 480.1.003	Abrasion test using the ABREX Test Equipment
GEBERIT (PA100134)	Requirements for pad printing using the ABREX Test Equipment

BSH, Apple, Miele, Swarovski, Audi, Porsche, ECB, MAN, etc.

## Model Options

Model	ABREX® Standard*	ABREX® -E	ABREX® -A*	ABREX®-D
<b>Load</b>	1-20 N			
<b>Friction Path</b>	4-40 mm			
<b>Extension Speed</b>	6 ± 0.5 cm/s			6 ± 0.5 cm/s (S mode); up to 20 cm/s (D mode)
<b>Scratch Speed</b> (single stroke, manually)	N/A	20 ± 2 cm/s (acc.to GS97034-2) for fin- gernail test; 70 ± 5 cm/s (acc. to GS 97034-3) for shoe sole test	N/A	
<b>Cycles</b>	1-10,000,000			
<b>Piston</b>	10mm & 20mm			
<b>Liquid</b>	automatic, manual			
<b>Fabric</b>	automatic, feed adjustable			
<b>Electricity</b>	230V / 50 Hz ; 110V / 60 Hz			
<b>Compressed Air</b>	4 bar, external, oil free, water free			
* <b>ABREX®</b> can be upgraded to <b>ABREX®-A</b> & <b>ABREX®-D</b> & <b>ABREX®-E</b> respectively.				
* <b>ABREX®-A</b> can run both standard abrasion test and special “swiping mode” with test condition of friction path of 20mm @ 5N @ 2Hz. Other frequency, friction path and load can also be achieved upon request.				