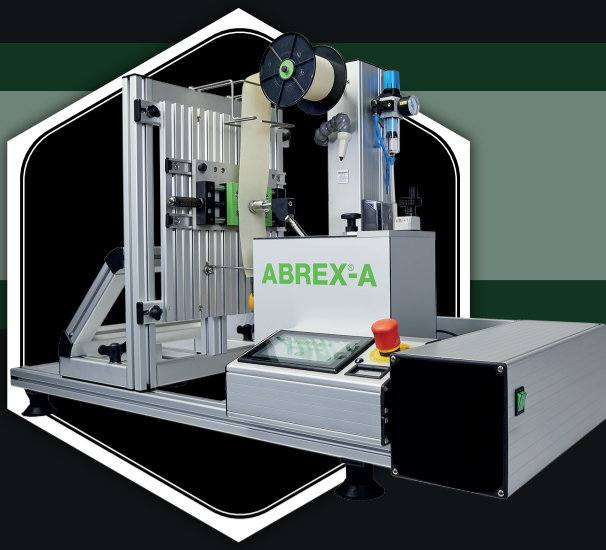




ABREX[®]
STANDARD

STANDARDS AND SPECIFICATIONS

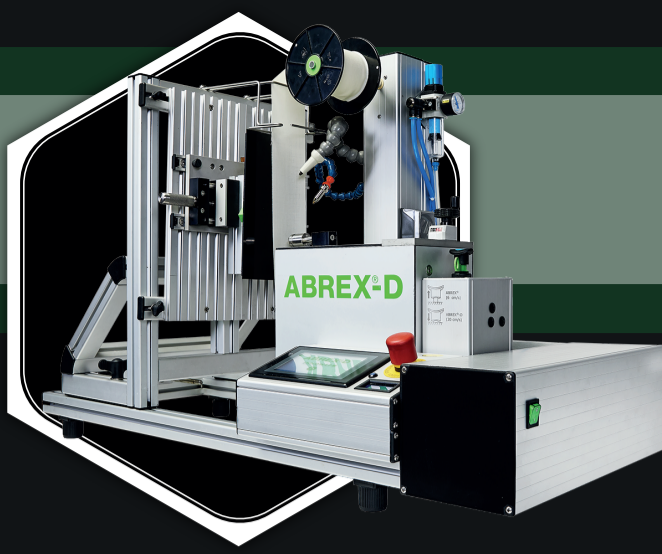
- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **BMW AA-0471** | Abrasion resistance using the ABREX test equipment
- **BMW GS 94007** | Coating on plastic parts - Painted plastic parts - Requirements and tests
- **BMW GS97034-1** | Surface test of motor vehicle interior materials - Manual abrasion test
- **BMW GS97034-4** | Surface test of motor vehicle interior materials - Color abrasion behavior
- **BMW GS97034-5** | Surface test of motor vehicle interior materials - Resistance to cleaning and maintenance agents
- **BMW GS97034-6** | Surface test of motor vehicle interior materials - soiling behavior and cleaning ability
- **BMW PR 506** | Durchführung eines Fingerprinttest an Oberflächen von Innenausstattungsteilen
- **BMW TL 9 138681.6** | Specs - Functional coating for gearshift lever badges hardcoatings
- **Daimler DBL 7384** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 1302** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 9202** | Dekorative und funktionale Werkstoffverbundsysteme im Interieur
- **DIN EN 60068-2-70** | Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **GB/T 2423.53** | Environmental testing for electric and electronic products. Part 2: Test methods. Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **IEC 60068-2-70** | 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
- **D24 5020** | Coatings for decorated interior plastic parts scratch resistance - method off the Abrex
- **BMW PA-P 315** | replaced by AA-P29
- **BMW AA-P296** | Abrasion resistance using the ABREX test equipment
- **BMW GS 97045-2** | Coatings on plastic parts - Painted plastic parts in exterior, interior and engine compartment - Test certificates
- **BMW PR 510** | Oberflächenbeständigkeit von Schalthebelknopfstangen
- **BN 155-01** | Resistance to simulated Finger Tip Abrasion
- **EWIMA** | Specifications for Hot Stamping foils and heat transfer foils
- **Renault**
- **DVM-0055-MA** | "Abrasion and Paint Wear Resistance using the Abrex Machine"



ABREX[®]-A

STANDARDS AND SPECIFICATIONS

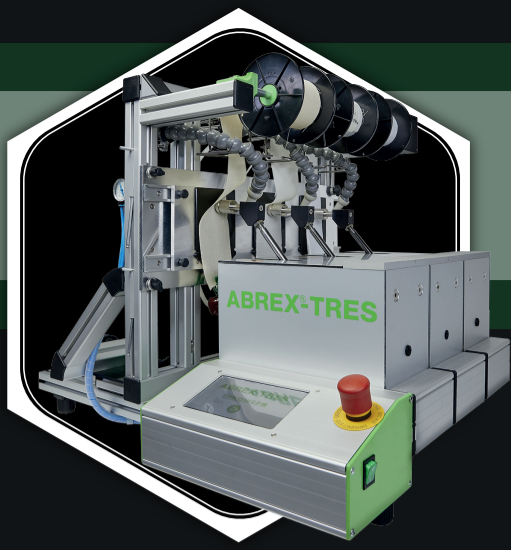
- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **BMW AA-0471** | Abrasion resistance using the ABREX test equipment
- **BMW GS 94007** | Coating on plastic parts - Painted plastic parts - Requirements and tests
- **BMW GS97034-1** | Surface test of motor vehicle interior materials - Manual abrasion test
- **BMW GS97034-4** | Surface test of motor vehicle interior materials - Color abrasion behavior
- **BMW GS97034-5** | Surface test of motor vehicle interior materials - Resistance to cleaning and maintenance agents
- **BMW GS97034-6** | Surface test of motor vehicle interior materials - soiling behavior and cleaning ability
- **BMW PR 506** | Durchführung eines Fingerprinntest an Oberflächen von Innenausstattungsteilen
- **BMW TL 9 138681.6** | Specs - Functional coating for gearshift lever badges hardcoatings
- **Daimler DBL 7384** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 1302** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 9202** | Dekorative und funktionale Werkstoffverbundsysteme im Interieur
- **DIN EN 60068-2-70** | Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **GB/T 2423.53** | Environmental testing for electric and electronic products. Part 2: Test methods. Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **IEC 60068-2-70** | 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
- **D24 5020** | Coatings for decorated interior plastic parts scratch resistance - method off the Abrex
- **BMW PA-P 315** | replaced by AA-P29
- **BMW AA-P296** | Abrasion resistance using the ABREX test equipment
- **BMW GS 97045-2** | Coatings on plastic parts - Painted plastic parts in exterior, interior and engine compartment - Test certificates
- **BMW PR 510** | Oberflächenbeständigkeit von Schalthebelknopfstangen
- **BN 155-01** | Resistance to simulated Finger Tip Abrasion
- **EWIMA** | Specifications for Hot Stamping foils and heat transfer foils
- **Renault**
- **DVM-0055-MA** | "Abrasion and Paint Wear Resistance using the Abrex Machine"



ABREX[®]-D

STANDARDS AND SPECIFICATIONS

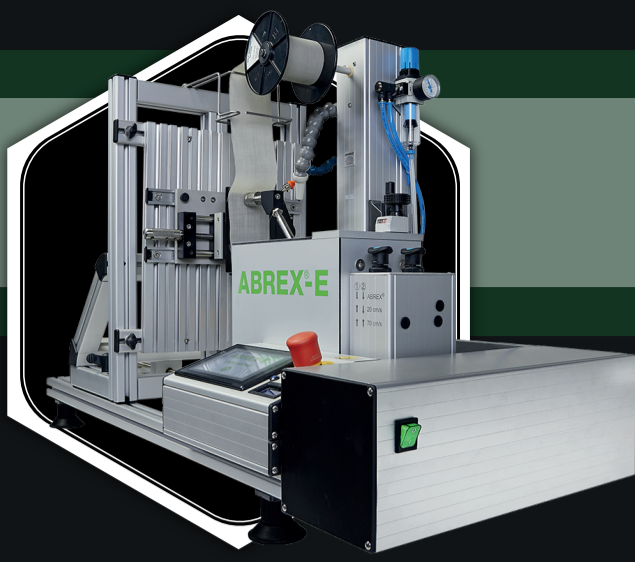
- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **BMW AA-0471** | Abrasion resistance using the ABREX test equipment
- **BMW GS 94007** | Coating on plastic parts - Painted plastic parts - Requirements and tests
- **BMW GS97034-1** | Surface test of motor vehicle interior materials - Manual abrasion test
- **BMW GS97034-4** | Surface test of motor vehicle interior materials - Color abrasion behavior
- **BMW GS97034-5** | Surface test of motor vehicle interior materials - Resistance to cleaning and maintenance agents
- **BMW GS97034-6** | Surface test of motor vehicle interior materials - soiling behavior and cleaning ability
- **BMW PR 506** | Durchführung eines Fingerprinntest an Oberflächen von Innenausstattungsteilen
- **BMW TL 9 138681.6** | Specs - Functional coating for gearshift lever badges hardcoatings
- **Daimler DBL 7384** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 1302** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 9202** | Dekorative und funktionale Werkstoffverbundsysteme im Interieur
- **DIN EN 60068-2-70** | Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **GB/T 2423.53** | Environmental testing for electric and electronic products. Part 2: Test methods. Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **IEC 60068-2-70** | 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
- **D24 5020** | Coatings for decorated interior plastic parts scratch resistance - method off the Abrex
- **BMW PA-P 315** | replaced by AA-P29
- **BMW AA-P296** | Abrasion resistance using the ABREX test equipment
- **BMW GS 97045-2** | Coatings on plastic parts - Painted plastic parts in exterior, interior and engine compartment - Test certificates
- **BMW PR 510** | Oberflächenbeständigkeit von Schalthebelknopfstangen
- **BN 155-01** | Resistance to simulated Finger Tip Abrasion
- **EWIMA** | Specifications for Hot Stamping foils and heat transfer foils
- **Renault**
- **DVM-0055-MA** | "Abrasion and Paint Wear Resistance using the Abrex Machine"



ABREX®-TRES

STANDARDS AND SPECIFICATIONS

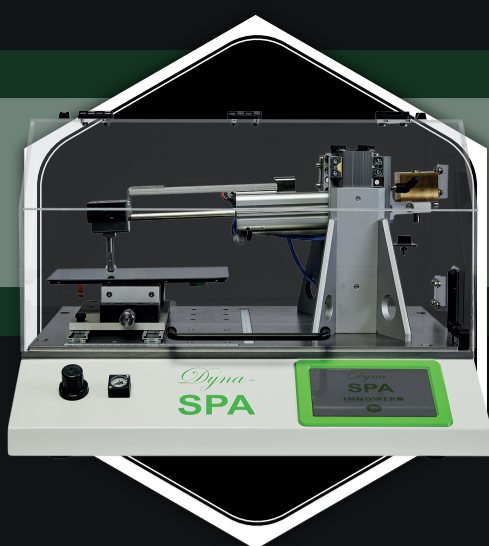
- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **BMW AA-0471** | Abrasion resistance using the ABREX test equipment
- **BMW GS 94007** | Coating on plastic parts - Painted plastic parts - Requirements and tests
- **BMW GS97034-1** | Surface test of motor vehicle interior materials - Manual abrasion test
- **BMW GS97034-4** | Surface test of motor vehicle interior materials - Color abrasion behavior
- **BMW GS97034-5** | Surface test of motor vehicle interior materials - Resistance to cleaning and maintenance agents
- **BMW GS97034-6** | Surface test of motor vehicle interior materials - soiling behavior and cleaning ability
- **BMW PR 506** | Durchführung eines Fingerprinntest an Oberflächen von Innenausstattungsteilen
- **BMW TL 9 138681.6** | Specs - Functional coating for gearshift lever badges hardcoatings
- **Daimler DBL 7384** | Beschichtung von Kunststoffteilen im Fahrezeuginnenraum
- **Daimler DBL 1302** | Beschichtung von Kunststoffteilen im Fahrezeuginnenraum
- **Daimler DBL 9202** | Dekorative und funktionale Werkstoffverbundsysteme im Interieur
- **DIN EN 60068-2-70** | Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **GB/T 2423.53** | Environmental testing for electric and electronic products. Part 2: Test methods. Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **IEC 60068-2-70** | 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
- **D24 5020** | Coatings for decorated interior plastic parts schcratch resistance - method off the Abrex
- **BMW PA-P 315** | replaced by AA-P29
- **BMW AA-P296** | Abrasion resistance using the ABREX test equipment
- **BMW GS 97045-2** | Coatings on plastic parts - Painted plastic parts in exterior, interior and engine compartment - Test certificates
- **BMW PR 510** | Oberflächenbeständigkeit von Schalthebelknopfstangen
- **BN 155-01** | Resistance to simulated Finger Tip Abrasion
- **EWIMA** | Specifications for Hot Stamping foils and heat transfer foils
- **Renault**
- **DVM-0055-MA** | "Abrasion and Paint Wear Resistance using the Abrex Machine"



ABREX®-E

STANDARDS AND SPECIFICATIONS

- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **BMW AA-0471** | Abrasion resistance using the ABREX test equipment
- **BMW GS 94007** | Coating on plastic parts - Painted plastic parts - Requirements and tests
- **BMW GS97034-1** | Surface test of motor vehicle interior materials - Manual abrasion test
- **BMW GS97034-4** | Surface test of motor vehicle interior materials - Color abrasion behavior
- **BMW GS97034-5** | Surface test of motor vehicle interior materials - Resistance to cleaning and maintenance agents
- **BMW GS97034-6** | Surface test of motor vehicle interior materials - soiling behavior and cleaning ability
- **BMW PR 506** | Durchführung eines Fingerprunttest an Oberflächen von Innenausstattungssteilen
- **BMW TL 9 138681.6** | Specs - Functional coating for gearshift lever badges hardcoatings
- **Daimler DBL 7384** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 1302** | Beschichtung von Kunststoffteilen im Fahrzeuginnenraum
- **Daimler DBL 9202** | Dekorative und funktionale Werkstoffverbundsysteme im Interieur
- **DIN EN 60068-2-70** | Environmental testing - Part 2: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **GB/T 2423.53** | Environmental testing for electric and electronic products. Part 2: Test methods. Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands
- **IEC 60068-2-70** | 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
- **D24 5020** | Coatings for decorated interior plastic parts scratch resistance - method off the Abrex
- **BMW PA-P 315** | replaced by AA-P29
- **BMW AA-P296** | Abrasion resistance using the ABREX test equipment
- **BMW GS 97045-2** | Coatings on plastic parts - Painted plastic parts in exterior, interior and engine compartment - Test certificates
- **BMW PR 510** | Oberflächenbeständigkeit von Schalthebelknopfstangen
- **BN 155-01** | Resistance to simulated Finger Tip Abrasion
- **EWIMA** | Specifications for Hot Stamping foils and heat transfer foils
- **Renault**
- **DVM-0055-MA** | "Abrasion and Paint Wear Resistance using the Abrex Machine"
- **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 PR 512** | Fingernageltest mit dem ABREX Prüfstand



DYNA-SPA®

STANDARDS AND SPECIFICATIONS

- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **ASTM D 5178** | Standard test method for mar resistance of organic coatings
- **ASTM D2197** | Standard test method for adhesion of organic coating by scrape adhesion
- **ASTM D6279** | Standard test method for rub abrasion mar resistance of high gloss coatings
- **BMW GS97034-10** | Surface test of motor vehicle interior materials
Scratch and abrasion resistance
- **BMW GS97034-11** | Surface test of motor vehicle interior materials - Variable shoe sole test
- **BMW GS97034-8** | Inclination
- **BMW GS97034-9** | Surface test of motor vehicle interior materials - Scratch test
- **BS EN ISO 12137-1** | Paints and varnishes - Determination of mar resistance
- **CFFA-7** | Standard test methods - chemical coated fabrics and film
- **DIN EN 12983-1** | Kochutensilien - Haushaltskochgeschirre zur Verwendung auf einem Ofen, Herd oder Kochmulde- Teil 1
- **DIN EN ISO 12137** | Beschichtungsstoffe Bestimmung der Beständigkeit gegen Verkratzen
- **DIN EN ISO 1518-1** | Paints and varnishes - determination of scratch resistance
Part 1: Constant-loading method
- **DIN EN ISO 1518-2** | Paints and varnishes - determination of scratch resistance
Part 1: variable-loading method
- **DIN ISO 9211-4** | Optics and photonics - Optical coatings
- **BO 162-01** | Resistance to scratch and mar
- **IEC 60794-1-2** | Wire/ Cable scrape test
- **ISO 10373-2** | Identifikationskarten - Prüfverfahren - Teil 2: Karten mit Magnetstreifen
- **JIS L0849** | Test methods for colour fastness to rubbing
- **MIL-STD-2223 Method 6004** | Wire/ Cable scrape test
- **D45 1010** | "Interieur und Exterieur Kunststoffteile - Farbabriebbeständigkeit"
- **Volvo STD 1024-3113** | Kratzbeständigkeit mit Erichsen-Prüfstab
- **PV 3952** | Plastic interior components. Testing of scratch resistance
- **DIN EN ISO 105-D02** | Textiles - Tests for colour fastness
- **DIN EN ISO 105-X12** | Textiles - Tests for colour fastness
- **AATCC Test Method 165** | Colofastness to crocking: Textile floor coverings
Crockmeter method
- **AATCC Test Method 8** | Standard test method for colorfastness of crocking of leather
- **ASTM D2054** | Standard test method for colorfastness of zipper tapes to crocking
- **ASTM D5053** | Standard test method for colorfastnesss of crocking of leather
- **D14 1055-2004** | Standard test method for colorfastnesss of crocking of leather
- **DIN 54012** | Prüfung der Farbechtheit von Textilien; Bestimmung der Waschechtheit von Färbungen und Drucken; Wäsche 95°C, 4 Stunden (Waschprüfung ISO-C05)
- **BI 161-01** | Mar resistance determination for automotive coatings
- **BN 108-13** | Resistance to scratching
- **WSS-M98P13-D** | Exterior Plastic Performance, Mold-in-color
- **GSO 481.1.003**
- **AA-0134** | Dry scratch resistance test using Crockmeter
- **AA-0180** | Cross hatch testing
- **AA-0412** | Abrasion Test of Leather by Means of a Ball Plate
- **AA-0546** | Universal Scratch Tester
- **AA-0564** | Taber-Abrasion Test Leather
- **AA-0570** | Test of abrasion resistance of flocked plastic Parts
- **DIN EN ISO 2409** | Paints and varnishes – Cross-cut test
- **DIN EN ISO 5470-1** | Rubber- or plastics-coated fabrics – Determi-nation of abrasion resistance – Part 1: Taber abrader
- **ISO 5470-2** | Rubber- or plastics-coated fabrics – Determi-nation of abrasion resistance
Part 2: Martindale abrader
- **IS/ISO 6722** | Wire/ cable scrape test
- **DIN EN ISO 12947-1** | Textiles – Determination of the abrasion esistance of fabrics by the Matindale method – Part 1: Martindale abrasion testing apparatus
- **ISO 15184** | Paints and varnishes – Determination of film hardness by pencil test
- **VCS 1029, 54729** | Adhesion; Cross-Cut Test



TRACET®

STANDARDS AND SPECIFICATIONS

- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **PV 3380** | Leather and Leatherette - Metrological Determination of Tactile Properties
- **ISO 25178** | Geometric Product Specifications (GPS) – Surface texture: areal is an International Organisation for Standardisation collection of international standards relating to the analysis of 3D areal surface texture.
- **ISO 4287** | Geometrical Product Specifications (GPS) — Surface texture: Profile method Terms, definitions and surface texture parameters



UST®

STANDARDS AND SPECIFICATIONS

- **VDE SPEC 90017 V1.0** | Durability and functionality testing of displays or surfaces, materials or products in the vicinity of the display.
- **BMW PR 505** | Bestimmung der Oberflächeneigenschaften - Vermessung mittels UST
- **BMW TL 9 138681.6** | Specs - Functional coating for gearshift lever badges hardcoatings
- **DIN EN ISO 14577-1** | Metallische Werkstoffe - Instrumentierte Eindringprüfung zur Bestimmung der Härte und anderer Werkstoffparameter
Teil 1: Prüfverfahren
- **DIN EN ISO 4287** | Geometrical Product Specifications (GPS) - Surface Texture: Profile method - Terms, definitions and surface texture parameters
- **PV 3960** | Instrumententafel Eindrückwegmessung (Härte) mit einer Universalprüfmaschine