MonTech®
Rubber Testing Solutions

Rotary Drum DIN Abrasion tester

...Innovative testing solutions
made in Germany!

MonTech ABR 3000
Rotary Drum DIN Abrasion tester

Abrasion Tester ABR 3000

The MonTech rotary drum abrasion tester in accordance with DIN 53516, DIN ISO 4649, AS1683.21 and ASTM D 5963 makes abrasion testing really easy. The test specimen is fixed into a quick clamp sample holder and precisely guided - either with or without rotation - over a predefined distance of either 20 or 40 Meters and with a defined load on a sheet of abrasive paper mounted to a stainless steel rotary drum of 150 mm diameter. The drum rotates with a speed of 40 rpm. Finally the frictional loss is calculated by comparing the sample weight before and after testing.

The MonTech ABR 3000 Abrasion tester is a tear testing instrument for determination of the resistance of elastomers in regards to the frictional loss of a rotating or fixed specimen.

- → **Standards** DIN 53516, ISO/DIN 4649, AS1683.21, ASTM D 5963
- → **Description** The test is made on materials which wear off or abrade, e.g. tires, belts, conveyor belts, shoe soles.
- → **Basic equipment** Stiff aluminum machine frame with brushless drive system and specimen holder,abrasion drum, metal housing, electric motor for rotation of the drum and the specimen holder

The working area is protected with translucent cover and protective safety switch. The specimen holder has a integrated dead weight of 2,5 N. Additional loading weights of 2,5 N and 5,0 N are supplied as standard accessories.

Test Procedure:

1. After determination of the abrasiveness of the abrasion sheet, the instrument is ready for testing. Samples can easily be drilled out of a rubber sheet or final product with the optional circular cutting knife. Typically tests are performed at ambient temperature of 23 ± 5°C or with the optional drum heating at elevated temperatures.
2. Initially the weight of the test specimen is measured
3. Afterwards the sample is mounted into the sample holder, the desired abrasion distance is set and the load weights are applied.
   The instrument cover is closed and the test is started by a simple click on the start button. The rotation of the drum will start and the specimen will be moved over the abrasive sheet.
   Once the pre-set abrasion distance is reached, the instrument will stop automatically.
4. After the test run is finished, the sample is removed from the sample holder and the weight of the sample after abrading is measured.
5. For calculation of the abrasion, the mass loss (average value of 3 to 10 single values) is converted to the loss of volume by help of the density and corrected for the deviation of the abrasiveness of the abrasion sheet from the set value of abrasiveness.
   Formula: Abrasion= mass lost x 200 specific weight x abrasiveness

Technical specification

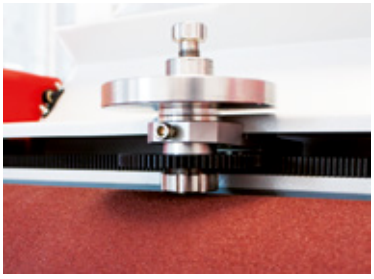
International standards		DIN 53516, DIN ISO 4649:2002 (E), AS1683.21, ASTM D 5963
Contact pressure for specimens expandable up to	N N	2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0
diameter of roller	mm	150
length of roller	mm	460
number of revolutions of roller	min-1	40
peripheral speed of roller with abrasion sheet	m/s	0,32
dimensions of abrasion sheet L/W	mm	472,5 (+2) x 400
film tape W/D	mm	50 x 0,2
abrasion distance of specimen	m	40 (20)
corresponds to roller rotations		84 (42)
angle of inclination of axle center of the specimen to vertical position of roller	degree	3
granulation of abrasion sheet		60
specimen diameter	mm	16
specimen thickness	mm	6 ... 15
maximum gripping length of specimen	mm	13
lateral feed of specimen per roller rotation	mm	4,2
number of revolutions of specimen holder for rotating specimen	min-1	0,9
power supply		100-240 V 50 / 60 Hz 100 VA
weight	kg	gross 80 / net 50
dimensions of abrasion tester W/D/H	mm	760 x 360 x 320

Scope of supply:

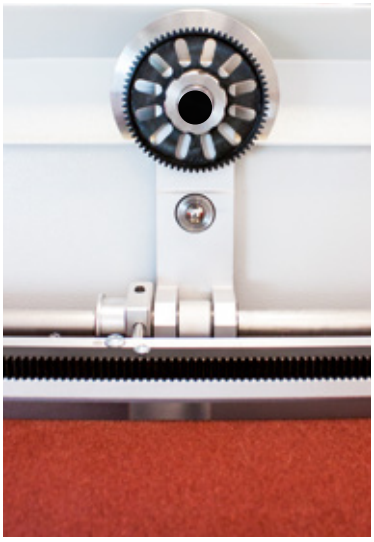
- → Abrasion tester as described above, 230 Volts, 1 Amps
- → Set of emery papers / abrasion sheets
- → Roll of adhesive tape
- → Set of brushes
- → Safety cover

Optional:

- → Analytical balance, max. 83 g, 0.1 mg
- → Heated drum
- → Additional load weight 10 N
- → Drum cleaning unit
- → Circular sample cutter, diameter 16 mm
- → Standardized test elastomer specimen according to ISO4649
- → Set of emery papers / abrasion sheets



Load weight system



Quick clamp sample holder

Accessories

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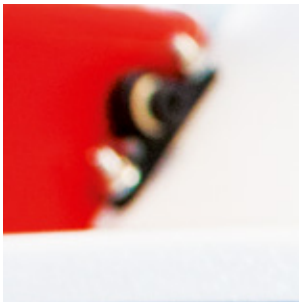
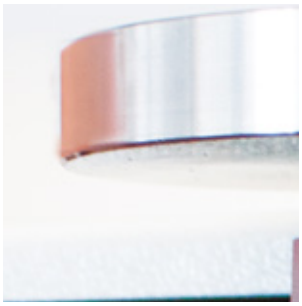
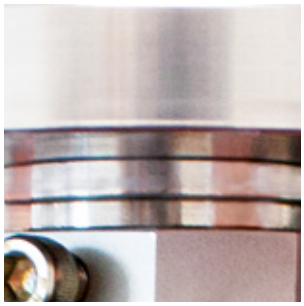
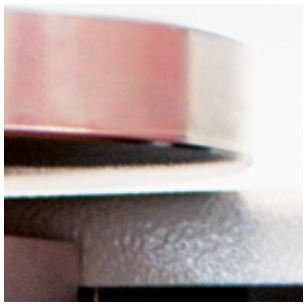
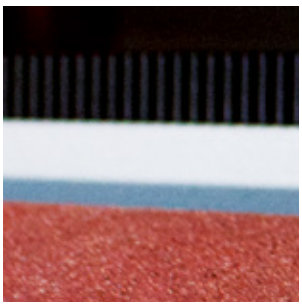
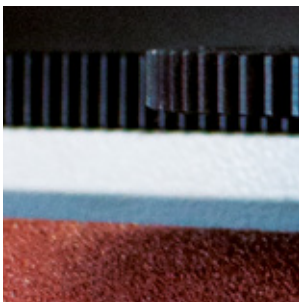



MonTech
Werkstoffprüfmaschinen GmbH
Carl - Benz - Straße 11
D - 74722 Buchen / Germany

Phone: +49 (0)6281 562230
Fax: +49 (0)6281 562255
info@rubber-testing.com
www.rubber-testing.com