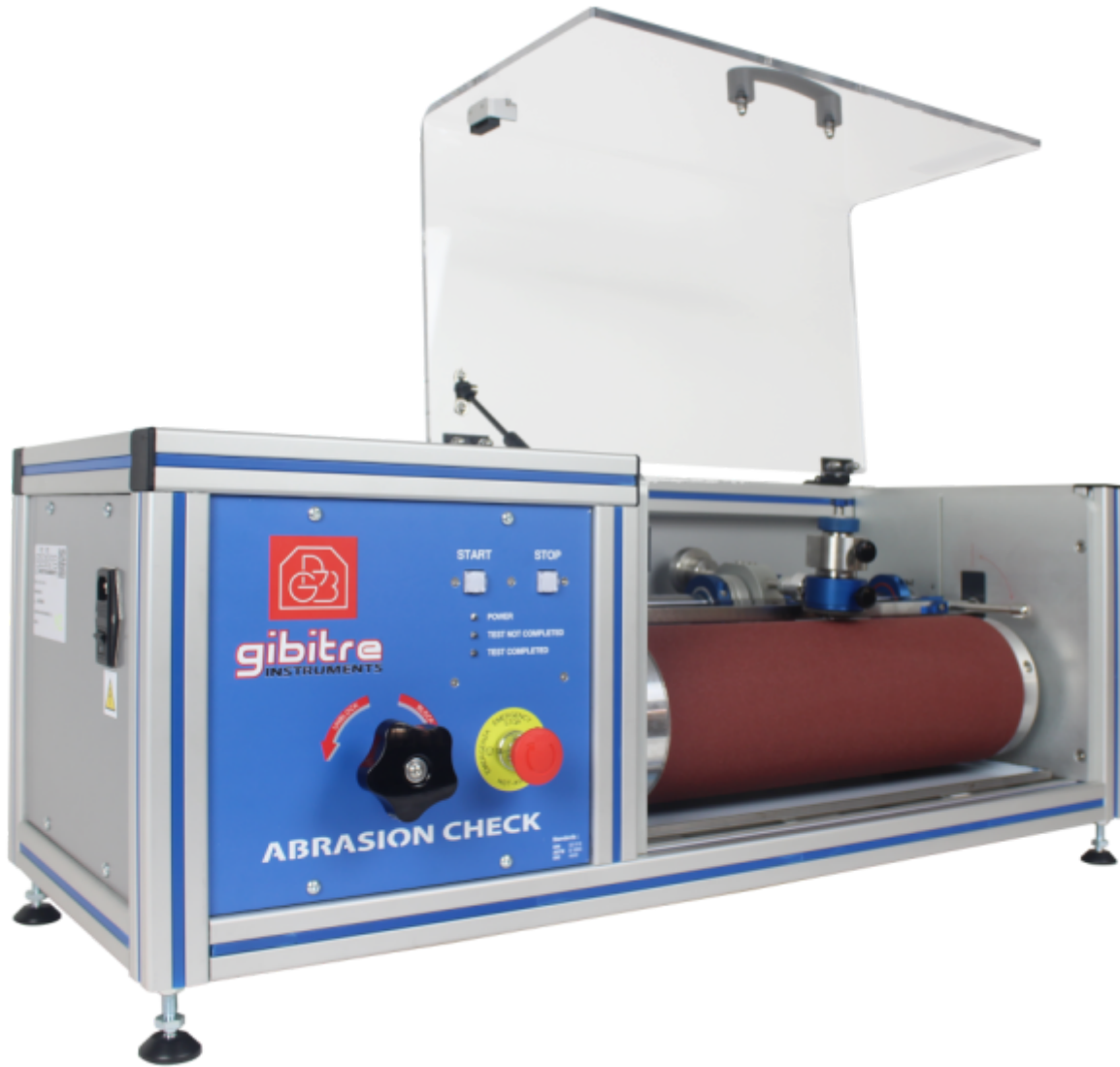


# ABRASION CHECK

ABRASION TESTER IN COMPLIANCE WITH ISO 4649, ASTM D5963 (DIN 53 516) STANDARDS



**gibitre**<sup>®</sup>  
INSTRUMENTS

## Standards the instrument complies with:

ASTM D5963; EN 12770; ISO 4649;

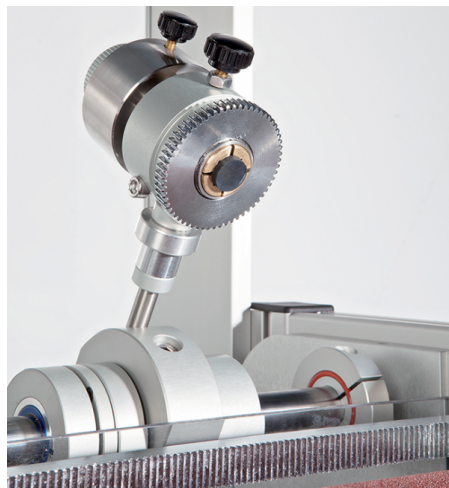
### Overview

The abrasion test gives a comparative evaluation of the resistance to the abrasion of specimens made of vulcanised rubber, plastic and different materials.

**The abrasion test according to ISO 4649 and ASTM D5963** is performed on a standard specimen through the use of a certified abrasive paper on a rotating drum with a standard test cycle.

### Description of the test

- The test allows measuring the volume loss of a cylindrical specimen with 6 mm thickness and 16 mm diameter, which can be obtained by molding or punched from a finished product.
- The specimen is inserted into the locking clamp.
- During the abrasion cycle, the specimen is pressed with a defined force against a rotating drum to which abrasive paper is applied.
- The measurement of the volume variation of the specimen after the abrasion cycle is carried out with a millesimal scale (not included in the supply)



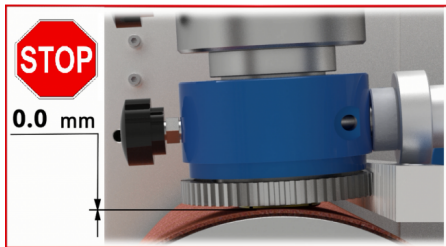
### Key Features

- Easy setup of the instrument to select test mode and perform tests with or without axial sample rotation
- Quick change of the weights to perform tests with 5 N, 10 N or 20 N vertical force
- Detection of premature sample consumption with automatic test stop
- Special design of the sample holder with regulation of closure force of the sample and accurate set of sample protrusion.
- Electronic motor controller for accurate control of the rotating speed of the drum.
- Integrated brush for continuous drum cleaning during the test.
- Drum unlock system to ease the replacement of the abrasive paper and the cleaning of the instrument.
- Protection transparent panel
- EU Labelling



### UNIQUE FEATURE: Automatic Detection of Premature sample consumption

- The instrument automatically detects when the sample is totally abraded and is no more in contact with the abrasion paper.
- The instrument automatically stops and the light warns that the test has not been successfully finished.
- This unique features permits to prevent mistakes in the evaluation of the abrasion resistance of your products



### UNIQUE FEATURE: Drum unlock System

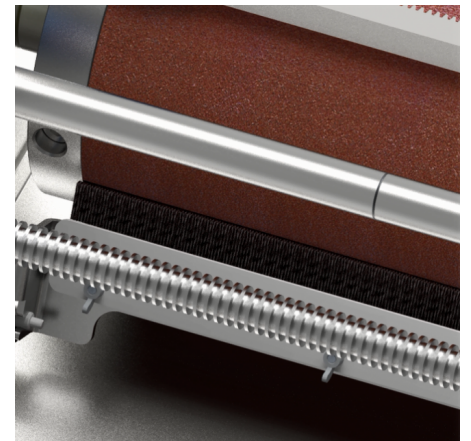
The drum release device allows the replacement of the abrasive paper to be carried out in a simple and easy way. The handle in the front position of the instrument allows for quick and easy unlocking.

If you have tried replacing the paper of an instrument that does not have this feature, you will appreciate the difference.



### Brush for continuous cleaning of the drum

The instrument is equipped with a brush for the continuous cleaning of the drum. The device guarantees the removal of the debris left by the specimen, speeding up the execution of the tests



## Rubber Samples from Certified rubber plates for abrasive paper calibration

Rubber samples obtained from Standard Reference compound for the calibration of the abrasive sheet and for use as a comparative reference compound.

Standard reference compound n°1 in conformity with ISO 4649, annex B, clause B2.



**STANDARD REFERENCE COMPOUND FOR THE CALIBRATION OF THE ABRASIVE SHEET AND FOR USE AS A COMPARATIVE STANDARD REFERENCE COMPOUND**

Standard reference compound No.1 in conformance with  
**ISO 4649, Annex B, clause B.2**  
Cylindrical shape, diameter 16 mm ± 0.2 mm

| Min. mass loss | Max. mass loss | Abrasion distance |
|----------------|----------------|-------------------|
| 180 mg         | 220 mg         | 40 m              |

Range:

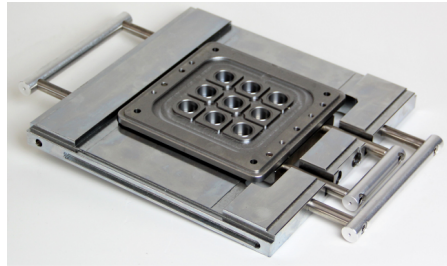


Gibitre Order Item: **1.950.092**  
Rubber Test Sheet ID No.: **7229-2**

Available also: Abrasive sheet made with aluminum oxide of grain size 60, bonded to the sheet with a phenolic resin.  
Gibitre Order Item: **0-480-00-001-0**

## Mould for compression moulding of test samples

Mold compliant with ISO 4649 for the preparation of specimens to standards. The mold allows to prepare specimens by compression molding starting from compound.



## Rotating cutter for sample preparation

The die, conforming to the requirements of the ISO 4649 standard, must be applied to a drill press and allows to obtain specimens for abrasion test from finished parts

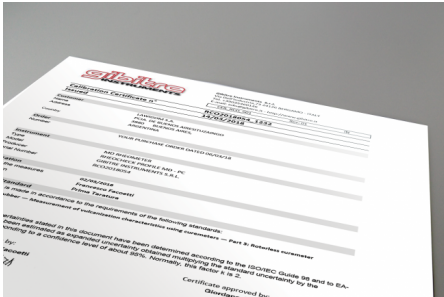


## Standard Calibration service for an Abrasion Tester

The calibration is performed with reference to the requirements of ISO 4649 standard.

The service includes:

- Ordinary maintenance of the instrument
- Calibration of the number of revolutions of the drum during the test
- Calibration of the lateral displacement of the sample
- Calibration of the test time
- Calibration of the vertical force on the sample holder (5N and 10 N)
- Calibration of the abrasiveness of the emery paper with Certified rubber samples (3 tests)
- Issue and e-mail shipment of the Calibration Certificate with traceability to primary standards.



## Safety Devices

- Safety protection door with safety switch
- Safety Push-button
- CE labelling



## Development and production

The instrument is totally developed and produced in the plant of Gibitre Instruments in Italy.

All the mechanical parts are produced in the company workshop using modern CNC machines.

Components and sensors from well-known brands are selected in order to ensure the maximum reliability in the measures

Internal trained personnel takes care of all the production stages: **assembly, start-up, calibration, packing, shipment and installation.**



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## Testing Configuration

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|                   |                                                                                                                                                                                                         |
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| <b>Test Setup</b> | <ul style="list-style-type: none"><li>• Test with/without sample rotation</li><li>• Selection of vertical force on the sample (5, 10, 20N - Other on request)</li><li>• Test with reduced run</li></ul> |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|                                                          |                                                                                                                                                  |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Weights for the application of the vertical force</b> | Weights are supplied for the application of:<br>5 ± 0.1 N<br>10 ± 0.2 N<br>Weights for application of different forces are available on request. |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|

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|                                      |                                                                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sample Holder Characteristics</b> | <ul style="list-style-type: none"><li>- Adjustable Sample closure regulation</li><li>- Lateral displacement of the sample: 4.20 mm per revolution of the drum</li><li>- Automatic placement of the test piece on the sheet at the beginning of the test and Automatic removal at test end</li></ul> |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|-------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Auto detection of premature sample consumption</b> | The instrument automatically stops when the sample is not touching the drum |
|-------------------------------------------------------|-----------------------------------------------------------------------------|

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|-------------|------------------------------------------------------------------------|
| <b>Drum</b> | Diameter: 150 ± 0.2 mm<br>Length: 500 mm<br>Rotation speed: 40 ± 1 RPM |
|-------------|------------------------------------------------------------------------|

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|                     |                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------|
| <b>Drum release</b> | Mechanical release of the drum for easy emery cloth replacement and instrument cleaning |
|---------------------|-----------------------------------------------------------------------------------------|

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|----------------------|-------------------------------------------------------------------------------------|
| <b>Motor Reducer</b> | The electronic motor controller installed ensures precise control of rotation speed |
|----------------------|-------------------------------------------------------------------------------------|

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## Safety Devices

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|-----------------------|-----------------------------------------------------------------------------------|
| <b>Safety Devices</b> | Polycarbonate cover of the drum with automatic safety block.<br>Safety pushbutton |
|-----------------------|-----------------------------------------------------------------------------------|

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|------------------|--------------|
| <b>Labelling</b> | CE Labelling |
|------------------|--------------|

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## Calibration

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| <b>Calibration</b> | Calibration Report conforming to ISO 4649 with traceability to primary standards |
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## Technical specifications

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| <b>Power Supply</b> | 220 VAC $\pm 10\%$ , 50 Hz $\pm 3,4$ A, single phase - 110 VAC $\pm 10\%$ , 60 Hz $\pm 3$ on request. |
|---------------------|-------------------------------------------------------------------------------------------------------|

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|                         |        |
|-------------------------|--------|
| <b>Electrical power</b> | 0.4 KW |
|-------------------------|--------|

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|                   |                                              |
|-------------------|----------------------------------------------|
| <b>Dimensions</b> | (Width x Depth x Height) 1000 x 400 x 400 mm |
|-------------------|----------------------------------------------|

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|               |       |
|---------------|-------|
| <b>Weight</b> | 75 Kg |
|---------------|-------|

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**Notes**

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|--------------|------------------------------------------------------------------------------------------------|
| <b>Notes</b> | A millesimal scale (not included) is used to calculate the reduction in volume of the specimen |
|--------------|------------------------------------------------------------------------------------------------|

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**GIBITRE INSTRUMENTS**

VIA DELL'INDUSTRIA, 18

BERGAMO (ITALY)

TE. +39 035 461146

[WWW.GIBITRE.IT](http://WWW.GIBITRE.IT)

[INFO@GIBITRE.IT](mailto:INFO@GIBITRE.IT)

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