# Elcometer 7061 MarSurf PS1 Surface Roughness Tester

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In protective coating applications there is a requirement to measure surface roughness.

Measurements of Surface Roughness are expressed in terms of Ra, Rz or Tp. These values include peak-to-valley profile measurement in combination with an assessment of the frequency of peaks within the sample area.

The Elcometer 7061 is a light weight and portable measuring solution for the range of surface roughness measurements required for compliance to International Standards.

The unit is also suitable for assessing surface roughness conditions in a wide range of general industrial applications; particularly where the sample is too large to bring to the laboratory.

Can be used in accordance with
ASTM D4417
ASME B46
DIN 4768
EN 10049
ISO 4287
ISO 4287/1
JIS B 0601

*Standards in grey have been superceded but are still recognised in some industries.*

- Multi-Lingual Display: All the required information is displayed on screen in a choice of 14 languages.
- Flexible: Can be used in virtually any position; horizontally, vertically, upside down. A height adjustment accessory to accommodate various sample sizes is supplied with each gauge as standard.
- Integrated Calibration Standard: No external calibration standard is required; provides greater ease of use.
- Drive Unit: Can be rotated and moved longitudinally; enables the stylus pick-up to be moved to the calibrating position. The stylus pick-up is also protected for transport in this position.
- Stylus pick-up with removable protection: 2µm (80µin) diamond stylus tip with a measuring force of 0.7 mN. Different stylus' are available for various applications.

**Surface Profile**
The degree of profile on the surface affects a coating's overall performance. The height of the profile (measured from the peaks to the troughs) determines aspects such as adhesion, coverage and overall volume of coating used.

If the profile is too large the amount of coating required to ensure adequate coverage increases, otherwise there is a danger that the peaks remain uncoated - allowing rust spots to occur. If the profile is too small, there may be an insufficient key to produce adequate adhesion, leading to premature coating failure.

Ensuring the correct surface preparation optimises the performance of the coating and material usage.

There are four different methods available for testing surface profile:

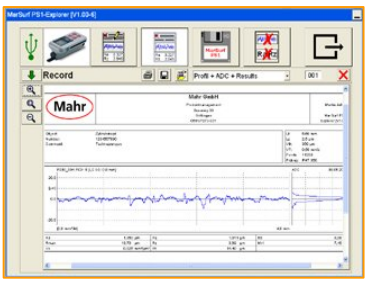
*Surface comparators:* Surface comparators are used to compare freshly blasted profiles to pre-defined profiles. The comparators are available as grit, shot or sand and comparisons can be made visually or by touch. This method is ideal for providing a very quick guide to the profile.

*Replica Tape:* A foam backed plastic test piece is pressed into the blasted surface. The tape is measured to establish the surface profile. This test produces a numerical value for the profile and a proof of test, as the tape can be included in manual reports.

*Surface Profile Gauges:* Surface profile gauges are available in either analogue or digital versions. Once 'zeroed', the profile measurement is taken and the gauge records the value from the top of the peak to the bottom of the valley. Digital gauges minimise interpretation errors in the readings and are fast and accurate. Memory versions allow readings to be stored and later downloaded to a PC via Bluetooth® wireless technology.

*Surface Roughness Testers:* These consist of a stylus attached to an arm which moves automatically over the surface to record and measure the profile. The gauges are ideal for inspection as part of quality control during the manufacturing process, where finer profiles are produced. There are four different methods available for testing surface profile.

# Elcometer 7061 MarSurf PS1 Explorer Evaluation Software




Available as an optional accessory PS1 Explorer Evaluation Software allows the Elcometer 7061 to be connected to a PC or laptop; using the USB cable supplied to document protocol profiles, results, statistics and to print out all your measurement results.

| TECHNICAL SPECIFICATION | |
|---|---|
| **Unit of Measurement** | Metric, inch |
| **Measuring Principle** | Stylus Method |
| **Stylus Pick-Up Supplied** *(Other stylus pick-ups are available)* | Inductive skidded stylus pick-up, 2µm (80µin) stylus tip, measuring force approx. 0.7 mN |
| **Parameters** | 24 (with tolerance limits): Ra, Rq, Rz equiv. to Ry (JIS), Rz (JIS), Rmax, Rp, Rp (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, R3z, RPc, Rmr equiv. to Tp (JIS, ASME), RSm, R, Ar, Rx |
| **Measuring range** | 350µm, 180µm, 90µm (changes automatically) |
| **Profile resolution** | 32nm, 16nm, 8nm (changes automatically) |
| **Filter**† | Phase-correct profile filter (Gaussian filter) according to DIN EN ISO 11562, special filter according to DIN EN ISO 13565-1, ls filter according to DIN EN ISO 3274 (can be disabled) |
| **Cutoff lc**† | 0.25mm, 0.8mm, 2.5mm; automatic (0.010”, 0.030”, 0.100”) |
| **Traversing length Lt**† | 1.75mm, 5.6mm, 17.5mm; automatic (0.069”, 0.22”, 0.69”) |
| **Traversing length (acc. to MOTIF)** | 1mm, 2mm, 4mm, 8mm, 12mm, 16mm (0.040”, 0.080”, 0.160”, 0.320”, 0.480”, 0.640”) |
| **Short cutoff**† | Selectable |
| **Evaluation length ln**† | 1.25mm, 4.0mm, 12.50mm (0.050”, 0.15”, 0.50”) |
| **Number n of sampling lengths**† | Selectable: 1 to 5 |
| **Calibration function** | Dynamic |
| **Memory capacity** | Max. 15 profiles, max. 20,000 results |
| **Other functions** | Blocking of settings (code-protected), date/time |
| **Battery** | Li-ion battery |
| **Interfaces** | USB, MarConnect (RS232) |
| **Dimensions** | 140mm × 50mm × 70mm (5.51” × 1.97” × 2.76”) |
| **Weight** | 400g (0.88lbs) |
| **Long-range power supply** | 100V to 264V |
| **Part Number** | K7061M001 Elcometer 7061 MarSurf PS1 Surface Roughness Tester |
| **Packing List** | Elcometer 7061 MarSurf PS1 base unit, drive unit, 1 x standard stylus pick-up, built-in battery, roughness standard integrated into casing, height adjustment accessory, stylus pick-up protection, universal charger / mains adapter, USB cable, carry case with shoulder strap and belt loop, calibration certificate and operating instructions |

† *According to ISO/JIS*

| ELCOMETER 7061 STYLUS PICK-UPS | | |
|---|---|---|
|  | **Stylus pick-up Extension; 80mm (3.15")** Part Number: KT007061P001<br>Ideal for measuring points located deep within cylinders | |
|  | **Stylus pick-up PHT 3-350** Part Number: KT007061P002<br>For measurements in bores from 3mm (0.12") diameter | |
|  | **Stylus pick-up PHT 11-100** Part Number: KT007061P003<br>For measurements at recessed measuring points, e.g. in grooves from 2.5mm (0.10") wide and up to 7.5mm (0.30") deep | |
|  | **Stylus pick-up PHTR 100** Part Number: KT007061P004<br>For measurements on concave and convex surfaces | |
|  | **Stylus pick-up PHTF 0.5-100** Part Number: KT007061P005<br>For measurements on tooth flanks | |
|  | **Stylus pick-up PT 150** Part Number: KT007061P006<br>Dual-skid stylus pick-up for measurements on metal sheets and roller surfaces according to DIN EN 10049 (SEP) | |
|  | **Stylus pick-up PHT 6-350** Part Number: KT007061P007<br>**Stylus pick-up PHT 6-350, 5µm Probe Tip** Part Number: KT007061P008<br>For measurements on flat planes, in bores from 6mm (0.24"), 17mm (0.67") deep and in grooves from 3mm (0.12") wide | |
|  | **Stylus pick-up Set** Part Number: KT007061P009<br>Comprising of Stylus pick-up PHT 3-350 & Stylus pick-up PHT 11-100 | |

| MISCELLANEOUS ACCESSORIES | |
|---|---|
| Measuring Stand ST-D | KT007061P010 |
| Measuring Stand Mount - Required to fix the Elcometer 7061 to the measuring stand | KT007061P012 |
| End Face Vee-Block - For measuring on flat faces of cylindrical and planar components | KT007061P011 |
| Adapter Set for Transverse Tracing; Comprising of Adapter for Transverse Tracing and Vee-Block Holder with Vee-Block - For hand-held transverse tracing of cylindrical measuring objects | KT007061P013 |
| Accessory Set; Comprising of Stylus pick-up Extension, Adapter for Transverse Tracing, Measuring Stand Mount and End Face Vee-Block | KT007061P014 |
| MSP2 Printer with Connecting Cable | KT007061P015 |
| MarSurf PS1 Explorer Evaluation Software | KT007061P016 |

## Related Products

*Elcometer 224*

### Elcometer 224 Digital Surface Profile Gauge

The Elcometer 224 provides the very latest in surface profile measuring technology. Accurate, fast and very user friendly, this gauge is available with or without memory. The Elcometer 224 Top model is available with wireless technology and can store up to 50,000 readings in 999 batches.

*Elcometer 124*

### Elcometer 124 Thickness Gauge

The Elcometer 124 Thickness Gauge is used to measure the peak-to-valley height of a surface profile moulded in the Elcometer 122 Testex Replica Tape.

*Elcometer 122*

### Elcometer 122 Testex® Replica Tape

Elcometer 122 Testex Tape consists of foam with a non-compressible backing. The foam side is rubbed into the surface providing a permanent mould of the peak-to-valley profile, which can then be measured using the Elcometer 124 Thickness Gauge.

*Elcometer 125*

### Elcometer 125 Surface Comparators

These extremely durable comparators allow the estimation of surface roughness of either grit and shot blasted surfaces. Using the Elcometer 125 surface comparators as a reference the blasted profile can be compared to the four reference profile grades in each comparator. Profiles are recorded in microns.

**ENGLAND**
Elcometer Limited
Edge Lane
Manchester M43 6BU

Tel: +44 (0)161 371 6000
Fax: +44 (0)161 371 6010
e-mail: sales@elcometer.com
www.elcometer.com

**USA**
Elcometer Inc
1893 Rochester Industrial Drive
Rochester Hills Michigan 48309

Tel: +1 248 650 0500
Toll Free: 800 521 0635
Fax: +1 248 650 0501
e-mail: inc@elcometer.com
www.elcometer.com

**ASIA & THE FAR EAST**
Elcometer (Asia) Pte Ltd
896 Dunearn Rd
Sime Darby Centre #3-09
Singapore 589472,
Republic of Singapore

Tel: +65 6462 2822
Fax: +65 6462 2860
e-mail: asia@elcometer.com
www.elcometer.com

**BELGIUM**
Elcometer SA
Rue Vallée 13
B-4681 Hermalle /s Argenteau

Tel: +32 (0)4 379 96 10
Fax: +32 (0)4 374 06 03
e-mail: be_info@elcometer.be
www.elcometer.be

**NETHERLANDS**
Elcometer NL
Newtonlaan 115
3584 BH Utrecht

Tel: +31 (0)30 210 7005
Fax: +31 (0)30 210 6666
e-mail: nl_info@elcometer.com
www.elcometer.com

**FRANCE**
Elcometer Sarl
97 Route de Chécy
45430 BOU

Tel: +33 (0)2 38 86 33 44
Fax: +33 (0)2 38 91 37 66
e-mail: fr_info@elcometer.fr
www.elcometer.fr

**GERMANY**
Elcometer Instruments GmbH
Ulmer Strasse 68
D-73431 Aalen

Tel: +49 (0)7361 52806 0
Fax: +49 (0)7361 52806 77
e-mail: de_info@elcometer.de
www.elcometer.de