

**RUGOTEST NO.3 – SURFACE ROUGHNESS COMPARATOR**

LD6010

MANUAL

**1 PRODUCT DESCRIPTION**

Surface finish specimens for testing surface roughness by the sight and touch method.

Registered design L.C.A. – C.E.A.

**The Sight and Touch method**

The specimens have been assembled so as to represent, for the most commonly-used machining methods, the limiting values of surface finish quality arranged in a geometrical progression in accordance with factor 2. These values were chosen among those recommended for the criterion "Ra" in the ISO standards 2632/I-1975 and 2632/II-1977.

Experience shows that the method of comparing a machined surface with a known sample, by sight and touch, enables the quality of the finish of this surface to be estimated with remarkable accuracy.

The remotest method is particularly convenient when specifying surface finish for components which feature in sub-contracting arrangements, sales contracts, etc.

The samples supplied are for use only in sight and touch comparisons, not as references for calibrating surface finish measuring instruments of any type.

Although the **Rugotest** is a simple and inexpensive tool, the reliability of the results it provides makes it highly useful at the levels of any manufacturing industry.

When opened, the left-hand page gives the most important information for the design office, the workshop and the classroom, as well as a summary of the relevant ISO standards for surface finish and the graph showing the relationship between production cost and surface finish.

**1.1 Specifications**

Surface roughness comparison standard, model RUG 3 for shot- and grit blasting.

Material : High-nickel test plate

Width : 90mm

Length : 118mm

**2 STANDARDS**

Complies with standards NF/E05-051, ASTM D 4417/A, ISO 2632 / I 1975, ISO 2632/II 1977

Look up the appropriate standard for a correct execution of the test.

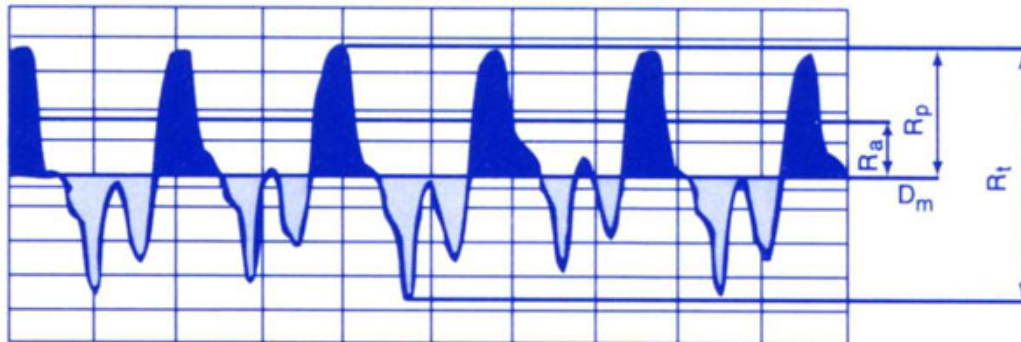
**3 WHAT'S IN THE BOX?**

The surface roughness comparison standard comes with table, manual and leather pouch.

#### 4 PERFORM A MEASUREMENT

- By positioning the comparing standard onto the test surface a comparison to the reference examples of the comparison standard is made.
- Assess the profile of the comparison standard most closely to match that of the test area and determine the result to the class: **A** for Shot and **B** for Grit.
- The fineness of the abrasive medium is further divided into: **a** for coarse grain or **b** for fine grain.
- Comparison of average roughness  $R_a$  value is found in the table were  $N_6=0,8$   $N_7=1,6$   $N_8=3,3$   $N_9=6,3$   $N_{10}=12,5$  and  $N_{11}=25$   $\mu\text{m}$ .

#### 5 EXPLANATION AND SUMMARY OF ROUGHNESS CRITERIA



**$D_m$  – Mean line of the surface profile:**

The line parallel to the direction of the sampling length, which divides the surface profile such that the sum of the areas enclosed by itself and the profile are equal above and below it.

**$R_a$  – Arithmetical mean deviation of the profile:**

The arithmetical mean of the absolute values of the profile departure.

**$R_p$  – Flattening depth:**

Distance between the highest point of the peaks and the average line.

**$R_t$  – Maximum height of the profile:**

The distance between the line of peaks of the profile and the line of valleys of the profile.

**$R_z$  – Ten point height of irregularities:**

The average value of the absolute values of heights of five maximum profile peaks and the depths of five maximum profile valleys.

**$R$  – Average depth:**

Mean of the peaks/depths distances.

Note: criteria's complete definitions can be found in the NF E 05-015 standards

## 6 INDICATION ON DRAWINGS

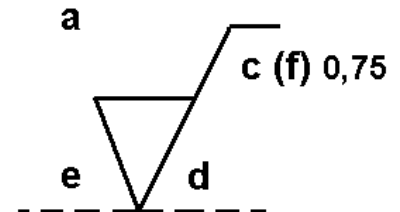
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Example

- a:** Roughness value Ra in micrometers or microinches or Roughness grade number N1 to N11
- b:** Production method. Treatment or coating.
- c:** Sampling length
- d:** Direction of lay
- e:** Machining allowance
- f:** Other roughness values (in brackets)

**Ra = 1,6**

**b milled**



## 7 MAINTENANCE

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- Though robust in design and made of nickel treat it with care.
- Clean the instrument using a soft dry cloth or a little soap. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- Always keep the instrument in its case when not in use.

## 8 DISCLAIMER

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The information given in this manual is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this manual without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this manual or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this manual is liable to modification from time to time in the light of experience and our policy of continuous product development.

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