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PHT-C751
PENCIL HARDNESS TESTER
OPERATING INSTRUCTION

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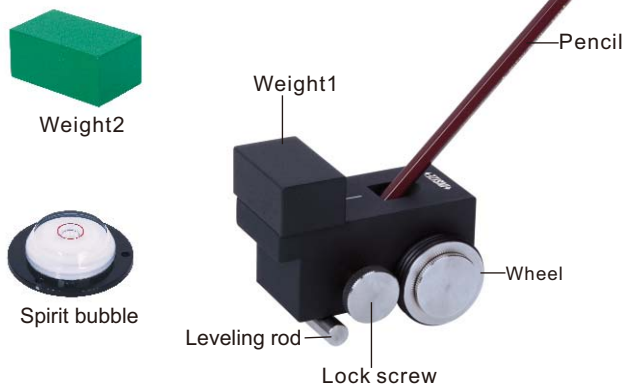
Introduction

PHT-C751this instrument offers an easy to use method for the determination of film hardness for a coating applied to a flat substrate, by means of drawing pencil leads of known hardness at a constant applied mass across the coated surface. Comparing with the PHT-A502 Pencil Hardness Tester, it can do the three different weights testing through adding the special weigh
This Pencil Hardness Tester complies with the requirements of ASTM D3363, ISO 15184, BS3900-E19 and ECCA-T4/1. In order to achieve consistent results it is recommended that the test be conducted in accordance with the stated test methods

Packing List

- Pencil Tester, Body
- 1 Set of Pencils (12) ： -4B-3B-2B-B-HB-F-H-2H-3H-4H-5H-6H.
- Special Pencil Sharpener
- Abrasive Paper, 400 grade grit.
- Spirit bubble
- 2 pcs different weights
- Certificate of conformity or Calibration （if requested）

Structure



Preparation for Test

The following instruction will provide the user with a working knowledge of how to conduct the test. These notes should be read in conjunction with the stated test methods in order to obtain meaningful results that can be used for comparative purposes.

1. Select the suitable weight before testing
A. The power of pencil tip is 500 gram if just have main tester body
B. The power of pencil tip is 750 gram if add the weight “A”
C. The power of pencil tip is 1000 gram if add the weight “A”and weight “B”
2. Select a pencil from the range, remove approximately 5 to 6 mm of wood from the point using the special Pencil Sharpener, being careful to leave an undisturbed, unmarked, smooth cylinder of pencil lead.
3. The tip of the pencil shall be squared by holding the pencil in a vertical position and moving the pencil back and forth over the abrasive paper, whilst maintaining an angle of 90°. Continue until a flat, smooth, circular cross-section is obtained, free from chips or nicks in the edges.
4. Repeat procedure 1 & 2 each time a pencil is used.
5. Place the coated panel to be tested on a level, firm horizontal surface.
6. Place the Pencil Tester Body on end, onto a firm horizontal surface （arrow pointing downwards &wheels facing uppermost）, then loosen the lock screw to permit the pencil to fit.
7. Slowly slide(care should be taken not to chip the pencil edges) the prepared pencil into the hole adjacent to the arrow until it rests on the same firm horizontal surface as the pencil tester body. Turn the pencil lock screw clockwise to lock the pencil in position.
Carefully lift the pencil tester off the surface, ensure pencil is set firm and is free from damage to edges.
Important: always ensure the position of the pencil is the same, thereby applying the consistent mass to the coating under test.

8.Carefully place the prepared pencil tester, wheels first onto the surface to be tested, gently bringthe pencil tip into contact with the coated surface to be tested, ensure no chipping occurs.
9.Immediately after the tip of the pencil rests on the coated surface, place thumb and forefinger on the pencil tester, centre portion of each wheel, push the instrument at the speed of 0.5mm/s in the direction of the arrow for a suggested distance of 7mm.
10. Inspect the coating after a specified period of time with the naked eye check for marking of the surface.
11. If no marking has occurred, repeat the test (1 to 8) on a new portion of undisturbed coating, moving up the hardness grade scale until marking occurs over the test distance. If marking has occurred repeat the test (1 to 8) down the hardness scale until marking no longer occurs.
12. Carry out the test in duplicate, if the results differ by more than one pencil unit
Note: The hardness of the hardest pencil that does not mark the coating is the so-called pencil hardness. Further definition of pencil hardness is stated in the test method standards.

Limitations

This test method is applicable to smooth surfaces, it is not considered suitable for textured or rough surfaces.

Routine Maintenance

1. Ensure the Pencil Tester body is free from damage, dents, paint chips etc. as this may effect the applied mass.
2. The rubber rings on the wheels are clean and free to rotate.
3. The instrument and pencils are stored in the case supplied when not in use. Always replace any pencils with the same reference type and manufacturer. (pencils from different manufacturers may produce different results)
4. Ensure the special pencil sharpener supplied is always used, check the blade for sharpness.
5. Replace the abrasive paper 400 grit when required.