

# Digital Pull off Adhesion Tester

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In order to perform satisfactorily, coatings must adhere to the substrates on which they are applied. There are three different adhesion test procedures to assess the resistance of paints to separate from the substrate. The cross cut test, also described as cross-hatch, uses a blade to cut through the coating to the substrate. At least two cuts are made that intersect at 90 degrees to get a right angle lattice pattern. The cross-cut area is observed for any adhesion failure. The second method to test the coating adhesion is using a stylus or loop that an increasing amount of weight is applied until the coating is removed from the substrate. The third method called pull-off adhesion, measures the amount of tensile stress to pull the coating off the substrate. A dolly is glued to the coating surface, after the glue is cured, a testing apparatus is attached to the loading fixture and aligned to apply tension perpendicular to the test surface. The force applied is gradually increased and monitored until either a plug of coating material is detached, or a specified value is reached.

**ekumet digital pull-off adhesion tester** is a portable, hand-operated instrument which is used to measure the force required to pull a specified test diameter of coating away from its substrate using hydraulic pressure. The pressure is displayed on a digital LCD and represents the coating's strength of adhesion to the substrate.

It evaluates the adhesion (pull-off strength) of a coating by determining the greatest tensile pull-off force that it can bear before detaching. Breaking points, demonstrated by fractured surfaces, occur along the weakest plane within the system consisting of dolly, adhesive, coating layers and substrate.

## **Characters**

### **CONVENIENT**

- ◆ Portable design, can be used anywhere.
- ◆ Built-in rechargeable lithium battery, no need any external power source.
- ◆ Selectable directly four different sizes dolly for different resolution and testing range
- ◆ Easily select dolly sizes, change measurement units or store readings, with the touch of a button
- ◆ Conversion charts not required tester automatically calculates pressure based on dolly size
- ◆ Inexpensive, single-use dollies eliminate cleaning for re-use and can be kept as a permanent record
- ◆ Each kit comes with everything needed for testing

### **DURABLE**

- ◆ Environmentally sealed enclosure weatherproof, dustproof and shockproof - meets or exceeds IP65
- ◆ Rugged carrying case
- ◆ Two year warranty

### **ACCURATE**

- ◆ Every Adhesion Tester pressure system is calibrated and certified to 1% accuracy using NIST traceable load cell
- ◆ Self-aligning aluminum dolly enables accurate measurements on smooth or uneven surfaces
- ◆ Hi-grade, industrial pressure sensor ensures continued accuracy
- ◆ Built in real-time clock, all reserved data has its own data and time, is convenient for operator to manage test data

### **VERSATILE**

- ◆ Internal Memory (200 pulls) stores maximum pull-off pressure, rate of pull, test duration and dolly size
- ◆ No need any software, when connecting the computer, operator can read all data directly which is recorded during testing.
- ◆ LCD displays pressure value in psi or MPa
- ◆ 10, 14, 20 or 50 mm dollies maximize capability and measurement resolution across a wide range of bond strengths

- ◆ Get the testing results from LCD directly.
- ◆ Includes all tools needed for testing

#### PRECISE

- ◆ Each **PsiaTester**'s pressure system is calibrated to within 1% accuracy by NIST traceable load cells
- ◆ High-precise professional sensor ensures 0.01MPa resolution
- ◆ Self-aligning dollies ensure to get a reliable testing results for smooth or uneven surfaces.

#### INTELLIGENT

- ◆ Store all test results (includes Max. pull-off power, pull-off rate, dolly size and time) automatically
- ◆ Two units (MPa and psi) for selection and can be converted automatically.
- ◆ No need any software, **PsiaTester** is also a U disk, when connecting the computer, operator can read all data directly which is recorded during testing.
- ◆ Showing pull-off rate allows users monitor and adjust pull speed according to different test requirements.

#### DURABLE

- ◆ Waterproof, dustproof and shockproof design meets any harshest operating environment
- ◆ Strong plastic carrying case
- ◆ Two year warranty

#### Main Technical Parameters:

- ★ Dolly Size: 20mm ( Standard ) ; 10mm、14mm、50mm ( Optional )
- ★ Resolution: 0.01MPa ( 1psi )
- ★ Accuracy:  $\pm 1\%$  Full scale
- ★ Max. Pull-off Pressure:  $\Phi$  10mm dolly  $\rightarrow$  0-80MPa;  $\Phi$  14mm dolly  $\rightarrow$  0-40MPa;  
 $\Phi$  20mm dolly  $\rightarrow$  0-20MPa;  $\Phi$  50mm dolly  $\rightarrow$  0-3.5MPa;
- ★ Power: Built-in rechargeable lithium battery, and standard configuration charging adapter.
- ★ Adhesion Tester Size: 360mm x 75mm x 115mm ( L x W x H )
- ★ Adhesion Tester Weight: 3KG

#### ★ Packing List:

- ① Adhesion Tester with digital display
- ② 20mm Aluminum test dollies ( 20 pcs )
- ③ Cutting toll for 20mm dollies,
- ④ 3M Adhesive and glue gun
- ⑤ Micro-USB cable
- ⑥ Operation Manual
- ⑦ Carrying case

