

## Application Fields For CHY-C1 Thickness Tester Become Broader

**Abstract:** this article briefs on the types and application fields of commonly used thickness tester, and presents the application of CHY-C1A mechanical thickness tester in the industry of textile and battery manufacture.

**Key words:** thickness testing, textile, battery diaphragm, mechanical thickness tester and CHY-C1.

For some materials, thickness testing is one important means to evaluate their quality. The testing objects are often materials such as paper, textile, chaff and board, which have strict demand on thickness. Testing purpose also changed gradually from controlling appearance quality to an important method of insuring further processing. For such reasons, testing of material thickness attracted attentions of various industries for the purpose of cost saving and enhancing the efficiency of industrialization production.

### 1. Common Methods of Thickness Testing

Ruler was the mostly broadly used tool in thickness testing. But with the advancement of science and development of society, testing objects presents a trend of thick and thin polarization. At the same time, requirements on testing precision of instruments are constantly increasing and advanced testing technologies applied in the field of thickness testing are also increasing. The commonly used thickness testing methods are ray thickness testing, supersonic thickness testing, optic thickness testing and mechanical thickness testing, of which there are great difference in terms of exterior structure of instruments and testing principles. According to whether presser foot contact specimen, thickness testing can be divided into contact type and non-contact type. The commonly used contact method is mechanical thickness testing and other methods belongs to the non-contact type.

### 2. Application Fields of Different Testing Methods

With different principles, testing methods varies in their application fields. For example, X-ray type method is usually used in single element testing such as steel plate. Eddy current is normally applied in coating thickness testing. Supersonic technology may be used in good ultrasonic conductor such as metal, plastic, ceram and glass. However, mechanical thickness testing has the strongest applicability. It has no selectivity on specimen and can be used for thickness testing of any material. During testing, certain pressure is applied on the testing surface of specimen, by which bigger data fluctuation caused by compressibility or non-uniformity of specimen can be effectively avoided.

### 3. Extending of CHY-C2 Application

In industries such as printing, textile and metallurgy, there is testing requirement for the thickness testing of some materials (finished products or raw material). This is partially because these materials cost higher, especially prices of some chemical materials are rising. Another reason is that non-uniformity of these materials may lower the product quality and result in mass

loss of finished products in modern high-speed production line. To be uniform in thickness and meet the designing requirement, thickness testing is of vital importance.

PTEE is usually used as interlayer to joint with various plus materials. It has the characteristics of wind proof, water resistant, ventilation and moisture peretrability and it feels comfortable. PTFE can be made into sports wear, exposure suit, light cold protective clothing and special exposure suit for atrocious weather according to requirements. Since PTFE is higher in price, the effective controlling of interlayer thickness can reduce production cost effectively. Capacitance or mechanical thickness tester can be chosen in testing, but some testing method is not suitable for PTFE. Generally, capacitance thickness tester is used in the production line due to its inconvenience and higher price. Mechanical thickness tester becomes the ideal choice because it is rather inexpensive and has no selectivity for specimen, Battery diaphragm is one of the main materials for battery manufacture. It is also the most important part of battery. Good diaphragm has a higher demand for material thickness and uniformity. Uniform thickness can reduce short-circuit ratio. Otherwise battery quality will be obviously reduced. But to reduce battery internal resistance, the thinner the diaphragm, and the better it is. Therefore, it increased the difficulty of diaphragm thickness controlling. The index of thickness is one of the testing items greatly concerned by diaphragm manufacturers and battery manufacturers. Mechanical thickness tester is more suitable because battery diaphragm material is usually PP or nylon that is soft and compressible. Some domestic battery manufacturers chose Labthink CHY-C1 for thickness testing of diaphragm.

Similarly, materials that are widely used in chemical products in the fields of building, furniture, fitment and medical appliance also have certain compressibility. Therefore mechanical thickness tester is great in demand. Since mechanical thickness tester has no selectivity for specimen, it can fully realize its multifunction and improve the instrument utilization ratio to a maximum extent.

#### **4. Labthink CHY-C1 Thickness Testers**



**Fig.1 Labthink CHY-C1 Thickness Tester**

Labthink CHY-C1 (see fig.1) is a kind of mechanical thickness tester. It adopts super high precision sensor and the resolution can reach  $0.1 \mu\text{m}$ . With all that advantages, its property has reached first class of similar products in the world. Through adjusting parameter setting of presser foot, CHY-C1 can completely fulfill thickness testing of various materials in the industries of printing, textile, chemistry and metallurgy.