ANDEREN LIMITED

Registered in England number 4514202

Wherever in the world quality matters

Glaze thickness Measurement

Overview

Glaze thickness measurement can be done in several ways and depends on a few factors:

- Do you want to measure fired or unfired glaze?
- Is the sub surface before testing soft (usually on once fired items) or hard (biscuit – usually twice fired)?
- How is the glaze applied (hand-sprayed, dipped, waterfall, robotically)?
- Do you want a fairly accurate reading of glaze thickness or simply a pass/fail test?

Once you have decided at what point you want to test there is an instrument to help

Fired product

Fired product offers the least number of choices. This is a destructive test. The sample needs to be accurately cut to provide a clean edge so that the thickness of the gaze can be accurately measured.

The standard test for this uses a “pocket microscope”.

Details

The Glaze Thickness Pocket Microscope is held against the edge of a cut piece of fired ceramics and the thickness of the glaze and also the sub surface can be easily seen under magnification.

There is a graticule (scale) that can be set to 0.02mm

The economy version of the glaze thickness measurement microscope has a convenient battery operated light source. Focusing uses a small wheel set into the side of the instrument

Magnification is x100

Product Code

MIC002 - Economy version of the pocket microscope with X100 magnification, fitted with battery operated light source and graticule 0.02mm

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Unfired Glaze.

Obviously you don't want to destroy product unless absolutely necessary and so wherever possible it is best to test before firing. Here we have a number of options

Glaze Thickness Measurement (Penetrometer)

Overview

The Glaze Thickness Penetrometer has been designed to offer a quick and easy way to measure the thickness of unfired glaze on ceramic surfaces. Models are offered that can be used on once or twice fired ware

Details

The Anderen Glaze Thickness Penetrometer has been designed to offer a simple and effective method to test the thickness of unfired glaze on ceramic surfaces.

The instrument has a reversible foot so that it can be used on both flat and curved surfaces Measurements can be made in either mm or 1/1000 inch by switching the measuring mode. Calibration is very simple. The needle is placed on a hard surface (glass or metal) The base of the foot is then bought into contact with the surface and the instrument is turned on. This immediately sets the penetrometer to zero

The Glaze Thickness Penetrometer can be used on either once or twice fired ware.

In the case of once fired where the sub material is soft a ball foot (supplied as standard) is used, In this case a small area of glaze needs to be scraped off the surface of the ware under test first. The foot sits on top of the surrounding glaze and the ball rests on the sub-surface.

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Where the sub surface is hard (as with twice fired ware) the ball foot is replaced by a needle. This penetrates the soft glaze but is stopped by the sub surface.

Readings can be viewed immediately or can be held if there is a difficulty seeing the reading.

Glaze thickness measurement instruments are IP69 rated meaning they are ideally suited to the wet and dusty conditions found in ceramics glaze departments

Product Code

Glaze Thickness Penetrometer for the measurement of unfired glaze (European Model)

The gauge is manufactured in Switzerland to a high level of precision GTP001EU

Glaze Thickness Penetrometer for the measurement of unfired glaze

Economy model GTP002ECON

Having tested the economy gauge, we find it to be robust and offering similar accuracy to the high spec model at a competitive price

Needle foot Supplied as an optional extra for use on twice fired ware GTPNEEDLE

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Harrow Glaze Thickness Measurement Instrument

Overview

The Harrow Ceramic Glaze Thickness Measurement Instrument was designed to offer a quick pass or fail test for both flat and curved surfaces. It offers a simple method where an exact thickness is not generally required. The instrument can indicate if there is enough or too much or too little glaze applied

Details

The Anderen Harrow glaze thickness tool consists of a handle and a "harrow". The Harrow is

manufactured to clients' specific requirements and consists of a hardened steel barrel into which are machined a number of blades. There are two outer blades and three glaze thickness measurement blades. These are set to show the minimum and maximum thickness of glaze required and an extra blade to show either 1/1000 inch or .02mm over maximum

How it works

The harrow is rolled across the wear leaving grooves - two from the outer wheels and then you count the number of additional grooves

No additional grooves indicate that there is not enough glaze

1 shows that there is at least the minimum thickness of glaze,

2 shows that there is the maximum thickness of glaze,

3 shows that there is more than the maximum thickness of glaze

The test is none destructive as the glaze will flow on firing to fill the narrow grooves left by the harrow

Product Code

HAR001 - Harrow Glaze Thickness Measurement Instrument - customer to specify maximum and minimum glaze thicknesses required

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Glaze Thickness Measurement (Ultrasonic)

Overview

If you want to measure the thickness of glaze that has been applied robotically then you can consider the 456GT ultrasonic glaze thickness measuring instrument, but in our experience this instrument is only suited to situations where automatic spray systems are in place. (sanitary ware) This is because the ultrasonic waves will not rebound in a predictable way from a ceramic surface. This means that you need to provide a suitable sub surface (metalized tape)

Details

456GTM glaze thickness measuring instrument is available in any combination of Basic, Standard and Top functionality, and can be supplied with a variety of probes to suit your individual needs

The test procedure is based on creating a suitable test sample, which requires that self-adhesive foil is attached to various points on the test piece which is then sent through the automatic glazing system.

Readings are then taken at the point or points where the foil has been laid. After testing the glaze can be washed off and the test piece can be used again

This application is very useful in automatic spray glaze lines in sanitary ware applications. Here it is important to ensure that the robotic spray guns are applying the correct thickness of glaze all over the pieces. By having a test piece that has adhesive tape attached to various key points a standard method can be established.

The test piece can be sent through the system at pre-determined regular intervals and the performance of the system can be monitored.

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The Integral Gauge features an inbuilt Bigfoot probe for stable placement, allowing for consistent and repeatable results.

Separate probe versions have an extensive range of plug in probes for measurements of a diverse range of applications

The Elcometer 456 Standard and Top models now come with Bluetooth® wireless technology. Instant transmission to your PC or hand held data device is now possible - no more cables required. However there is also an RS232 data output is available on all models.

Advantages

* Bluetooth wireless technology for cable free data transfer

* Fast reading rate of more than 60 readings per minute

* Readings can be downloaded to a PC or PDA and reports created in seconds

* Intuitive menus in multiple languages enables use straight from the box

* IMO PSPC ready

* Accurate and repeatable results

* Each model is available with or without memory

* A wide range of integral or separate probe versions

* Large backlit screen for easy viewing in dark environments

* Rugged and ergonomic, each gauge is designed to withstand the harshest environments

Product Code

456GTM Standard Ultrasonic Glaze Thickness Measurement Instrument

456GTM/P Standard Ultrasonic Glaze Thickness Measurement Instrument fitted with remote probe

456GTMTOP - Ultrasonic Glaze Thickness Measurement Instrument fitted with remote probe with wireless technology

Accessories

Roll self adhesive metalized tape 456TAPE