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A study on stress and strain behavior of different types of wafer-thin (WT) types objects and its reaction evaluation

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Abstract
A nature of a wafer-thin can be different and it can be hard, thin, thick, hard, rough or very smooth. Often, the stress and strain of such different type of wafer-thins or objects are evaluated by the Normal-Context-Area (NCA), which is the complete portion of the head which is pressured. The real and the nominal surface is avoided, but it is very hard and cannot be ignored at all the time. In this study, some new experiments are performed. These experiments help to obtain the evaluation of the relationship between the real contact area & the initial load is proposed. A new method is introduced with this way and the actual contact area between pressure head and the examined wafer-thin is same. The final results will show the relationship and difference between the real & nominal stress-strain nature of the wafer-thin.

Keywords: stress-strain behavior, wafer-thin (paper) stress behavior, stress-strain study

1. Introduction

The stress and strain both will show different behavior of different objects and it will affect the stress-strain curve. Normally the stress-strain curve behaves on the basis of the power applied dor defomation curve. The applied power or force data can be obtained from the tensile or multiple tests. But it is not necessary that this data will be accurate. Because the results may vary by different geometry environments. Often, the stress and strain of such different type of wafer-thins or objects are evaluated by the Normal-Context-Area (NCA), which is the complete portion of the head which is pressured. The real and the nominal surface is avoided, but it is very hard and cannot be ignored at all the time. In this study, some new experiments are performed. These experiments help to obtain the evaluation of the relationship between the real contact area & the initial load is proposed. A new method is introduced with this way and the actual contact area between pressure head and the examined wafer-thin is same.

2. Study and Methodology

The Basic Nature of an wafer-thin can be extraordinary and it tends to be hard, slight, thick, hard, unpleasant or smooth. Regularly, the anxiety of such extraordinary kind of wafer-thins or articles are assessed by the Normal-Context-Area (NCA), which is the finished part of the head which is constrained. The genuine and the ostensible surface is evaded, however it is extremely hard and can't be overlooked at constantly. In this investigation, some new trials are performed. These analyses help to get the assessment of the connection between the genuine contact territory and the underlying burden is proposed. Another technique is presented with along these lines and the genuine contact zone between weight head and the analyzed wafer-thin is same. The last outcomes will demonstrate the relationship and distinction between the genuine and ostensible pressure strain nature of the wafer-thin.

There are the following steps for this methodology

1. Carrying multiple experiments by applying different forces.
2. The transferring of the test results
3. Calculate the surface area tense.

The anxiety both will demonstrate diverse conduct of various articles and it will influence the pressure strain bend. Ordinarily the pressure strain bend carries on based on the power connected dor defomation bend. The connected power or power information can be acquired from the tractable or different tests. Electromagnet changes over electric vitality into mechanical vitality. It is used in various electromechanical gadgets, for instance, circuit breakers, motors, hand-off, etc. However, it isn't fundamental that this information will be exact. Since the outcomes may fluctuate by various geometry conditions. Regularly, the anxiety of such extraordinary kind of wafer-diminishes or questions are assessed by the Normal-Context-Area (NCA), which is the finished part of the head which is constrained. The genuine and the ostensible surface is dodged, yet it is extremely hard and can't be overlooked at constantly.

3. Methodology Analysis

In this examination, some new analyses are performed. These tests help to acquire the assessment of the connection between the genuine contact region and the underlying burden is proposed. Electromagnet changes over electric vitality into mechanical vitality. It is used in various electromechanical gadgets, for instance, circuit breakers, motors, hand-off, etc. Another strategy is presented with along these lines and the real contact territory between weight head and the inspected skinny is same.

Phases Steps

Step 1: Collect material Such as Wafer-Thin like Paper.
1. Examine its Type

2. Note its Nature
Step 2: Apply force on different Values
Step 3: Obtain data from the Test Results
Step 4: Analyze Test Results
Step 5: Conclude any Scientific Decision for Wafer-Thin like Paper

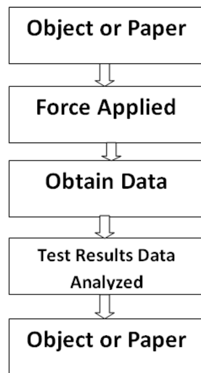

Fig 1: Stress and Strain Study on Wafer-Thin

For wafer-thin material, as a result of the presence of the surface harshness, the contact regions change persistently amid the test. There are numerous lab are taken for the all inclusive testing for various articles by which the conduct of items can be example and the exactness of test outcomes can be gotten. Such test outcomes are valuable for some modern trials. At the point when the outside of the weight head is smooth, the real contact territory P(z) under power is normally littler than the ostensible contact zone P. For skinny material, because of the nearness of the surface brutality, the contact areas change constantly in the midst of the test. Right when the outside of the load head is smooth, the genuine contact an area P(z) under power is regularly more diminutive than the apparent contact zone P.

4. Experimental setup

There are many laboratory are taken for the universal testing for multiple objects by which the behavior of objects can be specimen and the accuracy of test results can be obtained. Such test results are very useful for many industrial experiments.

Carbon papers	100 N	20 N	10 N	2 N
SH-1				
SH-2				
SH-3				
DL-1				
DL-2				
DL-3				
Geha-1				

Fig 2: Different objects (Wafer-thin) are taken as for tests

Electromagnet changes over electric energy into mechanical energy. It is utilized in numerous electromechanical devices, for example, circuit breakers, engines, relay and so forth.

5. Results and conclusion

The module of the objects are measured by many methods. Electromagnet changes over electric vitality into mechanical vitality. Normally the stress-strain curve behaves on the basis of the power applied dor defomation curve. The applied power or force data can be obtained from the tensile or multiple tests. As given below the figure shows the graph of trace paper in MD.

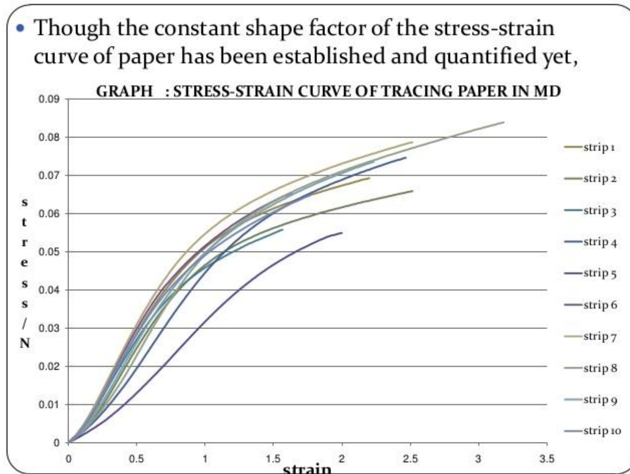

Fig 3: Stress-Strain Graphical Analysis on Wafer-Thin

But it is not necessary that this data will be accurate. Because the results may vary by different geometry environments. Often, the stress and strain of such different type of wafer-thins or objects are evaluated by the Normal-Context-Area (NCA), which is the complete portion of the head which is pressured. The real and the nominal surface is avoided, but it is very hard and cannot be ignored at all the time. It is used in various electromechanical gadgets, for instance, circuit breakers, motors, hand-off, etc. The major properties of the wafer-thin material were studied and the actual stress-strain curve is analyzed. The results can help us to differentiate the real and the nominal stress-strain properties.

6. References

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