



Determination of Thermal
Expansion Coefficient
Using Q.M

KES T – L480

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1. Scope of application

This standard shall specify the test method, by which thermal expansion coefficient of a metallic material is determined using a high temperature hardness meter in the range from normal temperature to 1000 °C.

2. Test equipment

High temperature hardness meter

3. Test method

3.1 Preparation and installation of a test sample

Make a standard test sample (5mm x 5mm x 10mm), polish it by 0.05 μm , and install it in a vacuum chamber in high temperature hardness meter.

3.2 Indicating a pressured mark

Check the point that is pressurized on a test sample, move about 5mm using micrometer for sample movement, and indicate the second pressurized mark.

3.3 Measuring initial length

Fix the line displayed in an inspecting window on a point of pressurized mark. Measure the distance to the other point of pressurized mark using micrometer for sample movement or micrometer for measuring hardness by 10^{-1} order.

3.4 Heating a test sample

Set the vacuum chamber at 10^{-5} Torr using a vacuum pump in high temperature hardness meter, heat it at a specified temperature, and keep the temperature for about 30 minutes.

3.5 Measuring changed length

Measure the distance between pressurized marks as specified in 3.3.