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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34183-2017

**Thermal insulating products for building equipment and
industrial installations -- Determination of the coefficient of
thermal expansion**

建筑设备及工业装置用绝热制品 热膨胀系数的测定

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method identical with ISO 18099:2013 "thermal insulation products for construction equipment and industrial installations thermal expansion coefficient Determination. " this standard proposed by the China Building Materials Federation.

This standard by the National Standardization Technical Committee thermal insulation material (SAC/TC191) centralized.

This standard drafting unit. Nanjing Fiberglass Research and Design Institute Co., Ltd., the national glass fiber product quality supervision and inspection center.

1 Scope

This standard specifies the principle of linear thermal expansion coefficient, equipment, samples, steps, calculations and results.

This standard applies to thermal insulation products, the temperature range of 196 °C ~ 850 °C, and does not exceed the temperature limit of thermal products. This standard is not suitable Used for articles that undergo dimensional changes during the test due to water loss or other phase changes.

2 Terms and definitions

The following terms and definitions apply to this document.

Linear thermal expansion Reversible changes in sample length due to temperature changes.

Mean linear coefficient of thermal expansion α the reversible change in length divided by the product of length and temperature difference at the reference temperature.

Coefficient of thermal expansion at temperature T

α_T Refers to the high temperature close

to low temperature α limit. see picture 1.

Note: The definitions of α and α_{H} assume that the change in length is continuous with the change in temperature. When the sample occurs, such as recrystallization or water loss and other phase transition Produce physical changes, it is not appropriate to use the average linear thermal expansion coefficient. The curve gives the function of length change and temperature change, but average linear thermal expansion the coefficient should not be calculated from the discontinuity of the curve.