

KES

Brake Lining Heat Expansion Test Method

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1. Purpose

The purpose of this standard shall be to assure the method and procedure of the test for evaluating the heat expansion of a brake lining and pad.

2. Scope of Application

This shall be applied to the heat expansion test method of a brake lining and pad for a car.

3. Equipment and Sample

- (1) The electric heater for a test should be one of hot wind circulating type to keep the temperature of 200 ± 10 °C, 300 ± 10 °C.
- (2) Use a sample out of the public samples.

4. Test Method

4.1 Initial thickness measurement

- 4.1.1 Measure the thickness of the sample including a shoe or support steel by the unit of 0.01 mm.
- 4.1.2 Select the thickness measurement positions according to the following. In addition, perform shallow position drilling on the shoe or support steel to decide the position of the measurement points.
 - (1) Set 5 points for the thickness measurement points of a brake lining and decide the positions according to the Fig. 1.
 - (2) Set 4 ~ 5 points for the thickness measurement points of a pad and decide the positions according to the Fig. 1.

5. Operation

Perform the 200 °C and 300 °C cycle test using each other sample according to the following.

5.1 200 °C cycle test (See Fig. 2)

- (1) Put the sample into the electric heater kept at the temperature of 200 °C and heat it for 60 minutes. Then, take out the sample from the electric heater and measure its thickness within 1 minute.
- (2) After the work of (1), leave the sample at the room temperature for 30 minutes and measure its thickness.
- (3) After measuring the thickness, put the sample into the electric heater kept at the temperature of 200 °C and heat it for 30 minutes. Then, take out the sample from the electric heater and measure its thickness within 1 minute.
- (4) After the work of (3), leave the sample at the room temperature for 30 minutes and measure its thickness.
- (5) Repeat the work of (3) and (4) twice.

5.2 300 °C cycle test (See Fig. 2)

- (1) Put the sample into the electric heater kept at the temperature of 200 °C and heat it to the temperature of 300 °C for 30 minutes and keep the sample for 30 minutes. Then, take out the sample from the electric heater and measure its thickness within 1 minute.
- (2) After the above work, leave the sample at the room temperature for 30 minutes and measure its thickness.
- (3) After measuring the thickness, put the sample into the electric heater kept at the temperature of 300 °C and heat it for 30 minutes. Then, take out the sample from the electric heater and measure its thickness within 1 minute.
- (4) After the work of (3), leave the sample at the room temperature for 30 minutes and measure its thickness.
- (5) Repeat the work of (3) and (4) twice.

6. Record

The record method shall be as follows. (See the Fig. 1)

- (1) Measure the thickness variation of the sample at each measurement at the base of the minimum thickness and record the maximum, minimum and average of the measured point at each measurement.
- (2) Examine and record the surface condition and the swell on the sample surface after the test.
- (3) Temperature and humidity of test room