KES

Method of Thermal Fatigue Test for Metallic Materials

KES T – L485

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1. Scope of application

This standard shall specify thermal fatigue test of internal metallic part for the purpose of comparing or selecting materials for the thermal fatigue crack. In this test, metallic material sample is placed alternatively in two regions that are kept at respective temperature.

2. Test sample

Follow the next for the test sample.

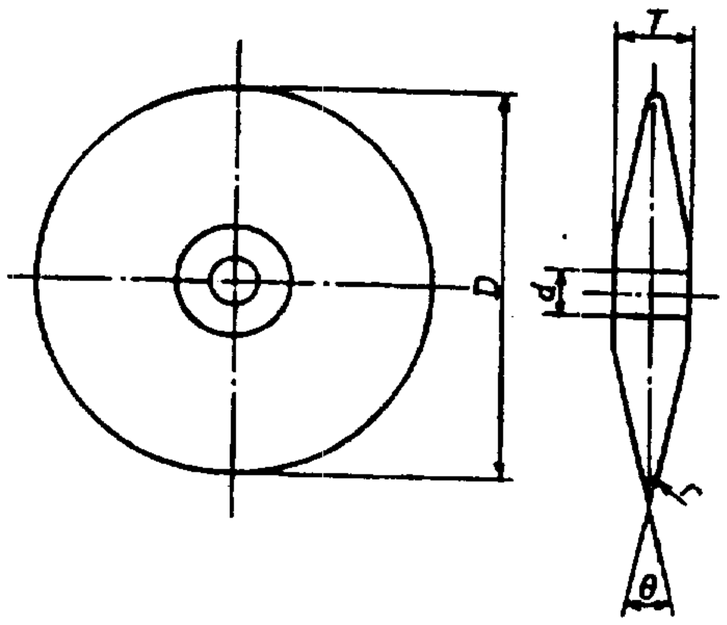
(1) Test sample is principally circular and button shape, so called bead-shaped.

(2) Follow the figure 1 for the shape and size of test sample. If the shape and size shown in the figure 1 is not satisfied, determine separate specification under agreement of parties concerned.

(3) Front end of test sample, on which crack is expected, should be smooth and has no processing flaw.

Unit : mm

(a) Circular test sample



Outer diameter : D = 60

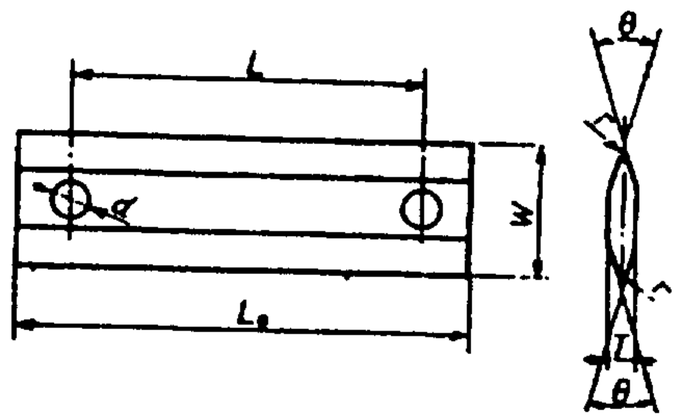
Inner diameter : d = 8

Edge angle : θ = 30 °

Edge radius of curvature : r = 1.0

Thickness : T = 10

(b) Button type test sample



Total length : L_0 = 100

Test part length : L = 75

Width : W = 30

Edge angle : θ = 30 °

Edge radius of curvature : r = 1.0

Hole diameter : d = 8

Thickness : T = 6

Figure 1: Shape and size of test sample

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