

EDS

Engineering,
GM DAEWOO Auto & Technology
Standards

TEST FOR DEFLECTION TEMPERATURE OF PLASTICS UNDER LOAD

EDS-T-7520

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1. PURPOSE

This standard is used to determine the deflection characteristics of plastic raw material testing piece under increasing temperature and specific load that generates specific bending stress.

Note) The resulting value under the standard does not mean the maximum usable temperature for the material.

2. DEFINITION

2.1. Heat deflection temperature: It means the temperature at which plastic raw material testing piece is deformed to specific length under specific weight.

3. DIMENSIONS AND NUMBER OF TEST PIECES

3.1. It shall be minimum (110 ± 0.2) mm in length, 6.2 ± 0.2 mm in width, 12.4 ~ 12.7mm in height, and its surfaces shall be smooth flat.

3.2. Unless otherwise specified, 3 test samples shall be tested and report the measured values

4. CONDITIONING

Test piece before testing shall be under conditions, $+23^{\circ}\text{C} \pm 2\text{K}$ and $(50 \pm 5)\%$ of relative humidity for 40 hours or more.

5. TESTING EQUIPMENT

5.1. All components of testing equipment in Figure 1 are as follows.

5.1.1. Supports for test piece

Space between supports shall be (100 ± 2) mm, diameter in the connection of supports and push metal shall be (3 ± 0.2) mm and a coefficient of line expansion in all parts shall be the same.

5.1.2. Heating bath

Heat-transfer medium such as mineral oil, liquid paraffin, and silicon oil not affecting testing shall be used, and increasing rate of $(2 \pm 0.2)^{\circ}\text{C}/\text{minute}$ shall be kept.

5.1.3. Temperature-measuring device

Temperature from -5 to 300°C shall be possibly measured in error within $\pm 0.5\text{K}$.

5.1.4. Deflection measurement device

Appliance to measure deflection quantity of testing piece shall be possibly measured to 0.01mm. When testing piece reaches the specified deflection, heating stops automatically and alarm bell rings.

5.1.5. Force

The force which is applied to test pieces is 4.6kg(66psi) or 18.6kg(264psi) using the weight, the force by materials