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**Plastics—Determination of
time-temperature limits after
prolonged exposure to heat**

ICS 83.080.01

Descriptors : plastics, environmental testing, thermal testing, temperature, thermal
endurance tests

Reference number : JIS K 7226 : 1998 (E)

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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In the event of any doubts arising as to the contents,
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Plastics—Determination of time-temperature limits after prolonged exposure to heat

Introduction This Japanese Industrial Standard has been prepared based on ISO 2578 : 1993, *Plastics—Determination of time-temperature limits after prolonged exposure to heat* without modifying its technical content and structure.

1 Scope

1.1 This Japanese Industrial Standard specifies the principles and procedures for evaluating the thermal endurance properties of plastics exposed to elevated temperature for long periods.

1.2 The term thermal endurance is used here to refer to tests made in air, excluding any other influence or stress applied to the test specimens. Thermal endurance properties evaluated in different environments and/or with different stresses applied to the test specimens require different test procedures.

1.3 In this Standard, the study of the thermal ageing of plastics is based solely on the change in certain properties resulting from a period of exposure to elevated temperature. The properties studied are always measured after the temperature has returned to ambient.

The various properties of plastics change at various rates on thermal ageing. To enable comparisons to be made of the thermal ageing of different plastics, the criteria for judgement depend on the type of property to be studied and its acceptable limiting value.

1.4 In the application of this Standard it is assumed that a practically linear relationship exists between the logarithm of the time required to cause the predetermined property change and the reciprocal of the corresponding absolute temperature (Arrhenius Law).

For the plastics tested, no transition, in particular a first-order transition, should occur in the temperature range under study.

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

- ISO 291 : 1977 *Plastics—Standard atmospheres for conditioning and testing*
- IEC 60216-1 : 1990 *Guide for the determination of thermal endurance properties of electrical insulating materials—Part 1 : General guidelines for ageing procedures and evaluation of test results*
- IEC 60216-2 : 1990 *Guide for the determination of thermal endurance properties of electrical insulating materials—Part 2 : Choice of the test criteria*