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JAPANESE INDUSTRIAL STANDARD

Testing Method for Melt Flow Rate of Thermoplastics

JIS K 7210 —1976

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JAPANESE INDUSTRIAL STANDARD

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Testing Method for Melt Flow Rate of Thermoplastics K 7210-1976
(Reaffirmed: 1979)1. Scope

This Japanese Industrial Standard specifies the testing method for the flow rate of thermoplastics for general application.

- Remarks 1. This method measures the rate of extrusion when molten thermoplastics are extruded through a die of specified length and diameter under specified temperature and pressure conditions.
2. This testing method includes Method A and Method B, Method A being a manual cutting-off method applicable to materials whose melt flow rates⁽¹⁾ are 0.1 to 25 g per 10 minutes and Method B being an automatic time measuring method applicable to materials whose melt flow rates⁽¹⁾ are 0.50 to 300 g per 10 minutes (refer to Remark of Table 3).

Note ⁽¹⁾ This means the same as the melt flow index shown in JIS K 6900 and is expressed by the symbol MFR.

3. The melt flow properties of high polymers depend on the rate of shear. The rates of shear in this test are extremely lower than the rate of shear used in usual forming work, and therefore, precautions shall be taken because for many thermoplastics the data obtained by this method do not always correlate with the flow behavior in actual use of such plastics. However, this method is useful for quality control.
4. The units and numerical values shown in { } in this standard are based on the International System of Units (SI) and are appended for reference.

2. Definitions

The main terms used in this standard shall be in accordance with JIS K 6900.

3. Apparatus and Appliances

3.1 Apparatus The apparatus used shall basically be an extrusion type plastometer which operates at a constant temperature and its general construction and dimensions are shown in Fig. 1. The sample is placed in a metal cylinder supported vertically and is extruded through a die by a weighted piston. The apparatus shall consist of the following main components:

Applicable Standards:

JIS K 6900-Glossary of Terms used in Plastic Industry

JIS Z 8401-Rules for Rounding off of Numerical Values

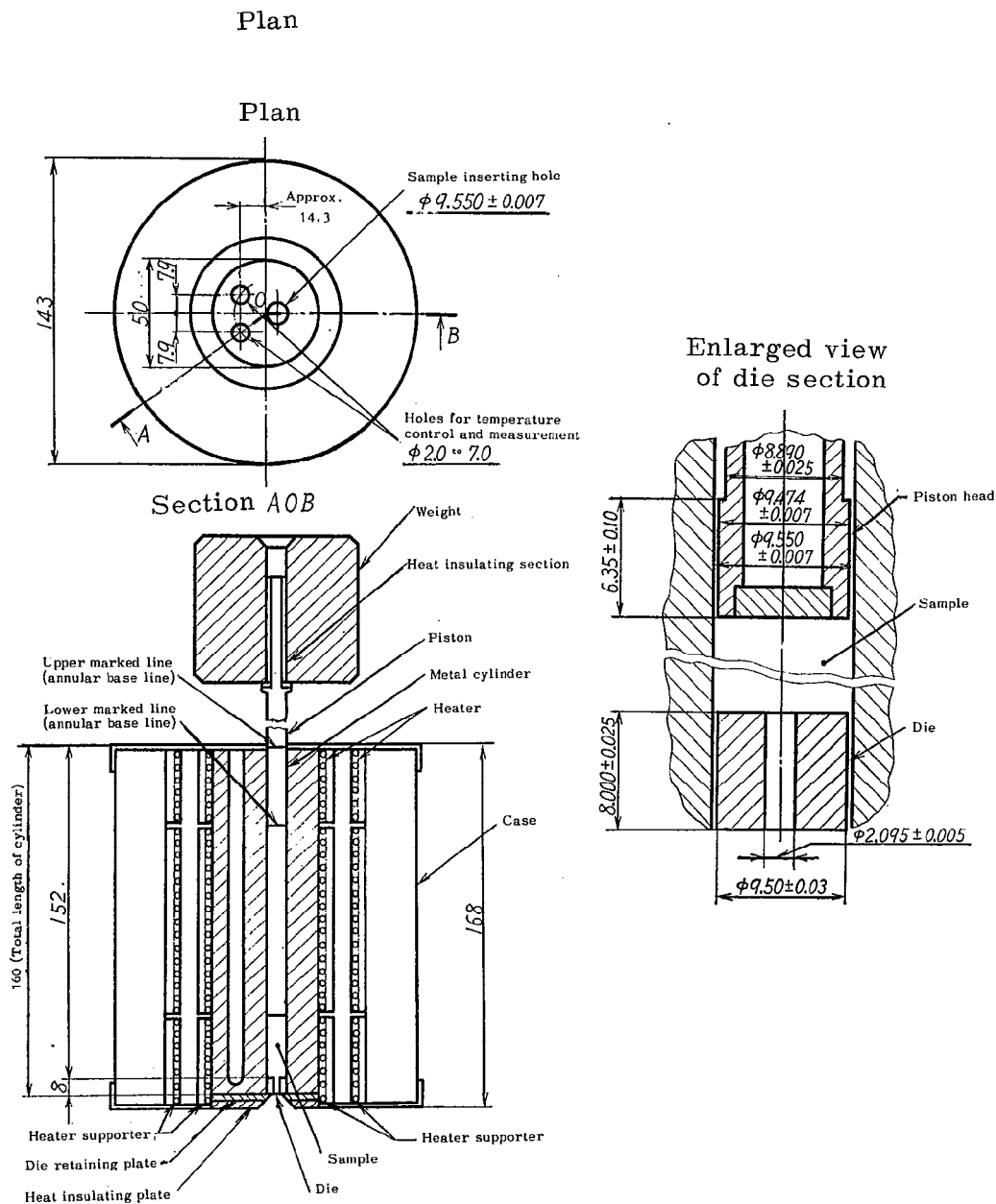
Reference Standard:

JIS Z 8203-SI Units and Recommendations for the Use of their Multiples and of Certain Other Units

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Fig. 1. Test Apparatus

Unit: mm



3.1.1 Cylinder The cylinder shall be a vertically fixed metal cylinder and thermally insulated so as to allow operation at temperatures up to 300°C. The cylinder shall be about 160 mm in length and have a sample inserting hole of 9.550 ± 0.007 mm in diameter and holes for inserting a thermometer and temperature adjusting device. The cylinder base shall be covered with a heat insulating plate⁽²⁾ so that the area of exposed metal portions is 4 cm² or less.