

(b) Heat insulating section to hold a temperature difference between the whole of the die and the rear section.

(c) Heating section in which the viscosity of the molten compound of the mixture in the molten state further drops, and

(d) Orientation section in which a magnetic field is charged, the magnetic powder is orientated and it is solidified with cooling as its state.

ABSTRACT

A die for an extrusion moulding of a resin bound type magnet which is moulded by orientating a magnetic powder in a molten mixture of a magnetic powder and a resin and by solidification with cooling wherein

the orientation section, located from a section from which the orientation of the aforementioned magnetic powder commences by application of a magnetic field at the front end of the said die to a section of the die outlet, comprises a layer structure with at least one or more of different material, and at least one or more of the material of the said orientation section is a magnetic material, or the layer structure is comprised by an insertion of a low thermal conductive material having the thermal conductivity of

$$K < 0.01 \text{ [cal/cm} \cdot \text{sec} \cdot ^\circ\text{C]}$$

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, the insertion material comprises a non-magnetic material and the thickness of the non-magnetic material is $1/2$ or less of a contacting length of the orientation section with the molten mixture,

or the length l of the orientation section located from a section where a magnetic powder is orientated by an application of a magnetic field at the front end of the die to the die section satisfies

$$l < d^2 / 2D$$

(d and D are the inner diameter and the outer diameter of the molten mixture passage)

and in case a non-magnetic material is present in the orientation section, the total length l' of the contacting section of the magnetic material with a mixture of a magnetic powder and a resin in a molten state satisfies

$$l' < d^2 / (2D).$$

A die for an extrusion moulding wherein a structure of the die comprises in order from a connecting section of an extrusion machine to an outlet of the orientation section as a converging section, a heat insulating section, a heating section and an orientation

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section, and the die which is suitable for production of a cylindrical resin bound type magnet.

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