Resin Plate Characteristics I

Insulating Plates / Thermal Plates / Bakelite Plates / Epoxy Glass Plates / Ceramics–

**Characteristics of Insulation Plates**

Micron-sized heat insulating powders provide excellent insulation. These plates are laminated with resistive sheets which are made with glass fiber (thin foil for forming) and combined material with high heat resistance. They are flame-resistant, heat-insulating, and easy to machine.

High Temperature Super Insulating Grade: Low temperature conductivity, high weight strength and high temperature provide excellent insulation.

Standard Grade: It has a use of a heat resistant structural material for handling pressures and is opaque.

Heat-Resistant Grade: It can be used as a heat resistant structural material in such higher temperatures and is more cost-effective than the standard grade.

High Strength Grade: It has high compression strength and bending strength properties and is suitable for use as heat insulating material for the outside of handling furnaces.

High Temperature Tolerating Grade: As the load of heat conductivity and high strength were realized, it provides excellent thermal effect with smaller thickness of plate.

Free-Cutting Grade: It has excellent mechanical strength and dimension stability. It can be used as cement based for electrical insulation.

**Characteristics of Thermal Plate**

Micropowder Insulating Plates are lightweight and provide excellent heat insulation effect.

The heat insulating plates make it possible to improve the operation environment such as heat reservation of equipment and prevention of burns at a low cost.

**Characteristics of Bakelite Plate**

Bakelite-Moisture Resistant (M) plates which can be used as insulating plates for switch boards, control box, etc.

Paper Base Type is available in natural color and black, and cloth coating Plate Type is also available.

Bakelite Color (Moisture Resistant) may vary depending on production lot, but does not affect quality.

**Characteristics of Epoxy Glass Plate**

Compared with paper base bakelite plates and cloth base bakelite plates, MBSM epoxy glass plates have high mechanical strength, chemically resistant heat resistance and moisture resistance.

High Temperature Grade has an excellent antistatic property.

**Notes on Usage of Insulating Plates and Thermal Plates**

(1) When machining, secure residual dust collectors for solid dust that may not settle.

(2) Be careful when handling the high insulating plate on the bench because it is soft.

The dust does not contain the designated chemicals such as asbestos, but safety measures for such dust in dust, such as masks and goggles are required.

(3) Avoid dust or skin entries, be cautious while carrying plates. When gloves are handled by the sliding parts of machine tools, there may be ingestion in excess due to abrasion.

(4) Drilling of the insulating plate may cause cracks. Therefore, it should be taken into account. It is especially recommended to handle the plate when drilling, etc. (Fig. B−(2))

(5) Be sure to use a washer with a bolt. The insulating plate may break when the bolt is tightened too hard. Especially, thermal plate (HIPCA) must be handled with care because of its softness. (Fig. A)

(6) The dust does not contain the designated chemicals such as asbestos, but safety measures for usual works in dust, such as masks and goggles are required.

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**Machining conditions of the Insulation Plate**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cutting Speed (m/min)</th>
<th>Feed (mm/Rotation)</th>
<th>Depth of Cut (mm)</th>
<th>Cutting Depth (mm)</th>
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</thead>
<tbody>
<tr>
<td>Circular</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
</tr>
<tr>
<td>Milling</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
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**Machining conditions of the Thermal Plate**

<table>
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</thead>
<tbody>
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<tr>
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**Machinable Ceramics Machining Conditions**

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<th>Ceramics</th>
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<th>Depth of Cut (mm)</th>
<th>Cutting Depth (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina</td>
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<td>0.05~0.13</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
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<tr>
<td>Zirconia</td>
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<td>0.05~0.13</td>
<td>0.05~0.13</td>
<td>0.05~0.13</td>
</tr>
</tbody>
</table>

**Notes**

(1) The above values are references only.

(2) Note: When using a washer with a bolt, it is recommended to use a washer that is strong enough to withstand the cutting force.

(3) The dust does not contain the designated chemicals such as asbestos, but safety measures for such dust in dust, such as masks and goggles are required.

(4) Be sure to use a washer with a bolt. The insulating plate may break when the bolt is tightened too hard. Especially, thermal plate (HIPCA) must be handled with care because of its softness.

(5) The dust does not contain the designated chemicals such as asbestos, but safety measures for usual works in dust, such as masks and goggles are required.