Wood Fiber Plastic Use Guide

Wood fiber plastic is one of the "bio-environmental protection resin material" products of Jiangsu Jinhe hi-tech co., LTD., which is composed of tree fiber and high performance resin by special method. It is a kind of thermoplastic resin from renewable resources, specially designed for injection molding.

The mechanical properties of wood fiber plastics are shown in the following table:

Indicators	Property
color	Light yellow
density	1.0g/cm^3
tensile strength	36Mpa
Elongation at break	28%
Bending modulus	1400MPa
bending strength	5845MPa
Melt index	18 g/10Min
Modified wood fiber content	≥20%
moisture	≤0. 4%
Mold shrinkage	1. 5%
Softening point of microcard	102℃

I.Compounding of materials with other resins

Wood fiber plastic can be injected directly or mixed with PP (polypropylene). This material blends with PP at any ratio, and the mixing ratio is based on the physical characteristics of the product, which is freely controlled by the user.

II. Injection molding process

Wood fiber plastics can be processed in traditional injection molding machines. The material is stable in the molten state under the following process parameters. Injection molding process is directly related to melt temperature. It is recommended to control

by adjusting screw speed, back pressure and processing temperature. The recommended processing temperature setting is shown in the following table (the specific process shall be optimized) :

Processing parameters of wood fiber plastics

Zone 1	170℃	Zone 2	170-190 ℃
Zone 3	170-190 ℃	Nozzle temperature	175-190 ℃

III. Requirements for molds:

1. The injection speed of moulds for thin-walled products is relatively fast, while that of moulds for thick-walled products is relatively slow; The fast shooting speed will easily cause glue burning and color difference, so the thickness of products should be no less than 1.2mm.

2. Different products have different requirements on the mold, especially the gate parts. Due to the presence of plant particles in the material, the glue injection port should not be too small, so the choice of gate is preferred to choose straight gate (large water gate); If the product thickness is within 3-5mm and the injection stroke is short, the sprue can be used, and the diameter of the sprue D is about 1.5mm. Use of hot runner should be avoided as far as possible.

3. Other parameters of the mold require that the dimensional accuracy of the parting surface should be less than 0.02mm; For the container products with larger injection depth, the release slope is generally required to be no less than 1.5 degrees on the outer surface and 3.0 degrees on the inner surface.

4, the mold should have a good exhaust.

IV. Drying of materials

The wood fiber plastic has been dried before leaving the factory, the moisture content is less than 0.4%, and it is protected by plastic film bag, which can be opened directly without baking material. Keep the package intact before use, and seal the unused materials quickly after use, otherwise moisture absorption will occur, and the surface of the products processed by the resin after moisture absorption may appear bubbles, white lines, brittle and other phenomena.

If the material is exposed to high air humidity in the air, or the exposure time exceeds 24 hours, it shall be re-dried before use.

Please refer to the following table for drying conditions

Drying parameters	typical setup
Residence time (hours)	2－3
Air temperature (℃)	80（Set the temperature of the drying hopper）
Air flow rate (m3/hr-kg resin)	＞1.85

V. The cleaning machine

1. Use LLDPE or PP to clean the injection molding machine after shutdown.

2. In the process of injection molding, if the material stays in the screw of the injection molding machine for more than 10 minutes, the residual material in the screw shall be emptied before feeding, otherwise the color difference may occur.

3. Seal the baffle at the bottom of the hopper during injection molding for a short time (usually less than half an hour); Then empty the remaining material in the cylinder to prevent blockage of feeding throat. Confirm to restart the production before opening the baffle to add materials.

4. If the material changes color or degrades in the process of processing, measures should be taken immediately to empty the material storage cylinder, observe the state of the material and see if it returns to normal. If normal can continue production; If it is abnormal, it should be adjusted accordingly.

VI. Recycling

Wood fiber plastics can be recycled. Recycled materials can be processed in the following two ways. After being re-dried, they can be mixed with new materials.

Mode 1: in the production process, it is directly crushed and mixed with new materials. (recommended usage)

Mode 2: cumulative storage (storage time shall not exceed 1 month), and then uniformly crush, dry through the dryer, and mix with new materials.