

Straw Fiber Plastic Use Guide

Straw plastic is one of the "bio-environmental protection resin material" products of jiangsu jinhe high-tech co., LTD., which is composed of crop straw and high performance resin by special method. It is a thermoplastic resin from renewable resources, specially designed for injection molding.

I. mechanical properties of straw plastics are shown in the following table:

Indicators	Property
color	light brown
density	1.1g/cm ³
tensile strength	24Mpa
elongation at break	8%
bending modulus	2170MPa
bending strength	45MPa
melt index	18 g/10Min
modified straw content	≥35%
moisture	≤0.6%
mold shrinkage	1.5%
Softening point of microcard	102℃

Application:

Straw plastic is used for processing various products, and the application field is expanding continuously. It is suitable for processing of products include the production of daily necessities, including disposable hotel supplies, garden supplies, tissue boxes, trash cans and other containers, pen holder, such as stationery and many daily necessities, moreover can also be used for part of the electrical appliances shell, the armrest of the plastic parts of furniture, outdoor equipment, rail, water filter plate, floor, etc., is widely use.

II. Injection molding process

Straw plastic can be processed by 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 straw plastics

Zone 1	170℃	Zone 2	170-190 ℃
Zone 3	170-190 ℃	Nozzle	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 part. 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 straw plastic has been dried before leaving the factory, with the moisture content less than 0.4%, and 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 (°C)	80 (Set the temperature of the drying hopper)
Air flow rate (m ³ /hr-kg resin)	>1.85

X、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

Straw plastic can be recycled, recycled materials can be processed in the following two ways, after re-drying can be mixed with new materials, but in any case, the proportion of recycled materials should not exceed 15%.

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.