Message

"Sustainable Development" is a common philosophy of "the United Nations, EarthSummit" aiming at moderate development by coexistence with the environment.

Also, at the end of 2015, "the Paris Agreement, Framework Convention on Climate Change" was adopted, and each country has begun to reduce greenhouse gas emissions.

The use of thinned wood and edge materials from the conservation of forests as industrial materials for local production and consumption leads to revitalization of the forest industry and resource conservation. And reducing consumption of petroleum-derived plastics can reduce oil dependence.

We made "Innovative Wood Plastic Composite [i-WPC]" which can easily be injection molded.

"i-Compology" is a coined term for "Innovative Composite Technology". We are trying to bring about innovation with a new approach to polymer composite technology which the predecessor could not do.

Company Profile

Company name
i-Compology Corporation

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Business content
Environment Bioplastic
Development, manufacture and sale of functional composite plastics materials and products

We create "A-ha! Materials".

http://www.i-compology.com/home_en.html
Natural Oriented Plastic... Wanted! Your Brilliant usage.

Effect

What is new?

Until now, there were extrusion molded articles like long shape products, but there was no "Wood Plastic Composite (WPC)" that can beautifully be mass-produced by injection molding. Because, wood powder is thermally decomposed at high temperature, and it becomes black and smells. Injection molding requiring especially low melt viscosity was regarded as a difficult dream technology.

Now, "Innovative Wood Plastic Composite (i-WPC)" that can be injection molded easily with general-purpose injection molding machines and molds has been made!

Environmental bio material / Wood Plastic Composite (WPC) is "Coexisting material with the environment".

   (Wood powder is carbon neutral, it is not regarded as a source of CO₂)

2. Forest preservation through use of thinned wood.

3. Effective utilization of thinned wood as industrial raw material instead of fuel.

Petroleum-derived plastics can be reduced.

Performance

Physical properties go up / It is strange, but adding soft wood powder increases the elastic modulus and the heat resistance considerably.

<table>
<thead>
<tr>
<th>Test items</th>
<th>Test method</th>
<th>Unit</th>
<th>General purpose Polypropylene</th>
<th>i-WPC wood powder 31wt%</th>
<th>i-WPC wood powder 51wt%</th>
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</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>JIS K-7112</td>
<td></td>
<td>0.91</td>
<td>1.025</td>
<td>1.101</td>
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<tr>
<td>Tensile test</td>
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<tr>
<td>Breaking strength</td>
<td>JIS K-7162</td>
<td>MPa</td>
<td>35</td>
<td>32</td>
<td>35</td>
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<tr>
<td>Yield strength</td>
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<td>MPa</td>
<td></td>
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<td>Elongation</td>
<td></td>
<td>%</td>
<td>5</td>
<td>&lt;5</td>
<td>&lt;5</td>
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<tr>
<td>Bending test</td>
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<td>Flexural strength</td>
<td>JIS K-7271</td>
<td>MPa</td>
<td>41</td>
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<td>Modulus of elasticity</td>
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<td>Charpy impact test</td>
<td>JIS K-7171</td>
<td>KJ/m²</td>
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<td>Heat distortion</td>
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<td>1.80MPa</td>
<td>77</td>
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<td>temperature</td>
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<td>0.45MPa</td>
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<td>100</td>
<td>115</td>
<td>130</td>
</tr>
</tbody>
</table>

The data described in this document are representative examples of measured values obtained under specified conditions and they are not guaranteed for the physical properties of end-use products.

Design

What is design and processing?

As well as coloring, painting and adhesion which was difficult with polypropylene can be done.

The width of the design expands with unique material texture.

Performance

Static suppression

Due to carbon neutral at the time of final incineration

CO₂ emission reduction

Reduction of use of petroleum derived plastics

Local production and consumption of thinned wood

Raw material diversification

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Heat resistance up than base polymer

The heat distortion temperature (0.45 MPa) rise to +15°C when 31 wt% wood powder is added +30°C with 51 wt%.

Elasticity up than base polymer

Flexural modulus increases to 1.5 times when 31 wt% wood powder is added 2.6 times when 51 wt%.

Coloring, painting and adhesion is also possible

It has a warmth feeling and moist feeling of wood,

Various use in wide range fields

Light, strong, wood texture. For building materials, daily necessities, household appliances, machine parts, automobiles, etc.