

## Impurities sorting equipment for plastic pellets (PLATON)

PLATON is the impurities sorting equipment for plastic pellets.

It is possible to install the equipment to the pellets production line, because of its small size and high flow rate treatment.

The impurities among the pellets are black points and discolored particles that generate during heat treatment in extruding machine, adhesive substances which generate in extrusion process, different colored particles that slip into the pellets during transportation.

So in-line high precision sorting equipment was required to stabilize and raise the quality of plastic pellets.



An example of impurity among pellets

Therefore we have developed the brand-new equipment to separate the defective particles, different colored particles, impurities in the particulate matters such as plastic pellets and so on, based on our imaging technology and the products of rice impurity separator "Kome Bugyo".

This equipment will be accepted in the fields of recycling such as the purity increase of the plastic flakes in the PET bottles recycling plants, and of the crushed plastics discharged from waste electric appliances and so on, enforcing the Law for Promotion of Sorting and Recycling of Containers and Packaging, and the Law for Recycling of Specified Kinds of Consumer Electric Goods that are recently talked about.

## High stain-rate-super-plastic forming and the development of its products

The parts forming technology using super-plasticity in which the large deformation can be obtained with lower stress, is partly applied to the field of aircraft and so on, as net shape forming method.

However the technology is not established yet as industrial parts manufacturing technology, because the forming speed is low and the cost is high.

The super-plasticity (high-stain-rate-super-plasticity) forming whose forming speed is one hundred times as fast as the conventional technology is, is applicable to the consolidation of rapidly solidified powder alloy (The powder is produced by Spinning Water Atomization Process), having the fine crystal construction.

This technology enable to produce net shape parts from heatresistivity alloy powder which is difficult to consolidate with conventional technology.

In this process, it is possible to manufacture the parts by net shape forming with one shot, and with little burn.

In this sense, this is energy and resource saving process.

We are now considering the application to the pistons of automobile engines and so on, expecting the reduction of fuel consumption by improving heat resistivity and weight reduction of the pistons.

This process is applicable to not pistons but also electric parts and precision machinery parts and so on.



Alloy powder material and piston

## Special drainage fitting “Super L”

Special drainage fittings are the construction materials used for domestic wastewater (miscellaneous wastewater) treatment pipes, being laid under the floor of the collective housing like condominiums.

The pipes drain the wastewater spirally along the vertical pipes collecting the drain from bathrooms and kitchens.

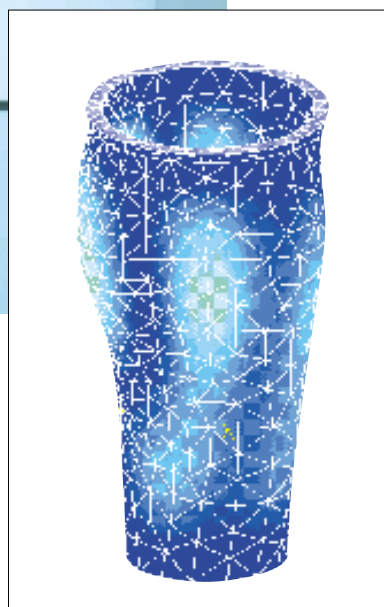
The needs for silence in the drainage noise in the living environment are increasing recently, being accompanied with the improvement of collective housing quality.

In newly developed “Super L”, we improved the drainage noise as well as the foam treatment of the wastewater including detergent.

We have realized the low noise of -3dB (compared with others in our company) by the reduction of vibration that generates noise, designing the optimum shape by mode analysis technology.



Special drainage fitting laid under the floor



Low noise design by shape optimization

## The development of the recycling technology for the waste F.R.P. bathtubs

The F.R.P. produce made of thermosetting resins are more difficult to be recycled among various kind of plastics.

So almost all waste F.R.P. products are dumped into the final disposal landfills as bulky wastes after crashing with demolition wastes.

The manufacture of F.R.P. bathtubs holding the high ratio in F.R.P. products rapidly increased with housing construction boom since 1970s. Increasing of the waste F.R.P. bathtubs is expected as increasing of the demands for rebuilding and modification of bathrooms. We were commissioned to develop the recycling technology of waste F.R.P.

bathtubs by the Clean Japan Center, and constructed the pilot plant for waste F.R.P. bathtubs crashing at Iga-town in Mie prefecture. It's study made a material recycling technology established that the crashed F.R.P. powder are used for roofing tiles made of cement mortar.

As a granted project by the New Energy and Industrial Technology Development Organization, an affiliated organization to MTTI, We continuously promote the technology development of crashing a large amount of waste F.R.P. and of recycling crashed F.R.P. powder, in industrial scale.



The pilot plant of crashing waste F.R.P. bathtubs



Crashed F.R.P. powder